Diathesis in the Semitic Languages

Exploring the binyan system

Øyvind Bjøru

SEM4090 - Masteroppgave i semittisk språkvitenskap (60 studiepoeng)

Institutt for kulturstudier og orientalske språk, Universitetet i Oslo

Asiatiske og afrikanske studier, semittisk språkvitenskap

Vår 2012

2012

Diathesis in the Semitic Languages: Exploring the binyan system

Øyvind Bjøru

http://www.duo.uio.no/

Abstract

This thesis looks at the system of verbal stems/diatheses/*binyanim* in the Semitic languages Akkadian, Gəᶜəz, Amharic, Arabic, Cairene Arabic, Hebrew, Aramaic, and Phoenician-Punic. The functions each of the stems can convey (such as the passive, reflexive, causative, factitive etc.) are surveyed and an attempt to reveal an underlying principle that can unite the various functions is made. A theory of prototypical transitivity, i.e. transitivity as a semantic rather than syntactic concept defined by means of a prototype, has been applied and has proven a useful tool in analyzing the verbal stems, and the three parameters of classification within this approach (volition, instigation, and affectedness) have turned out to be powerful means of distinguishing minute nuances between stems.

Initially the formation of verbal predicates in general, and the way participants are associated with them, is discussed. These general sections show that a theory of the *binyanim* that can account equally well for isolated forms as for rich and intricate interdependencies between several stems formed from the same root is possible if we look for the basic mechanisms that the *binyanim* encode. Through the analysis it is revealed that these basic mechanisms are for instance the affectedness of the subject, the lack of distinguishability of participants, and the focus on an instigating participant. It is also found that these basic properties of participants can receive a special focus, and that such focus shifts are another basic function of the *binyanim*. The difference between a causative and a factitive clause can for example be identified as the former's focus on the cause's instigation and the latter's focus on the causee's affectedness.

Preface

I would like to thank my supervisor, professor Lutz E. Edzard, for his valuable input and encouragement throughout the process.

I must also acknowledge the invaluable support offered by my beloved “partner in crime”, Oda Myran Winsnes, who has offered valuable suggestions, and not to mention moral support through her charming presence and delightful smile.

Contents

Abbreviations and designations

The consonantal root of a word will be referred to by means of the radical sign, e.g. √qtl. The separate radical consonants or their positions are labeled R_1, R_2, R_3. The various *binyanim* are labeled in accordance with the system used in most works on comparative Semitic linguistics:

Stem		**Examples**	
G (rundstamm)	The basic stem (morphologically)	Hebrew	qā̱ṭal
D (oppelungsstamm)	Double R_2	Arabic	qattala
C (ausative)	/š/s/ʾ/h/y/-prefix	Akkadian	šuprus
L (engthened)	Long vowel after R_1	Arabic	qātala
N (-prefixed)	/n/-prefix	Hebrew	niqṭāl
t (-prefixed/infixed)	/t/-prefix or –infix	Arabic	iftaʿala
tn (-infixed)	/tan/-infix	Akkadian	imtanaqqut
Red(uplicated syllable)	The syllable of R_2 is reduplicated	Amharic	säbabbärä
R (eduplicated R_3)	Double R_3	Arabic	iḥmarra

Other abbreviations:

BH	Biblical Hebrew
MH	Mishnaic Hebrew
IH	Israeli Hebrew
Wehr	Hans Wehr's "Dictionary of Modern Written Arabic"
AHw	Wolfram von Soden's "Akkadisches Handwörterbuch"
CDG	Wolf Leslau's "Comparative Dictionary of Geʿez"

Transcription

Akkadian

These are the symbols used for the transcription in the Akkadian section, in accordance with the most common practices within Assyriology, and specifically drawn from John Huehnergard's "A Grammar of Akkadian":

a, ā, â, b, d, e, ē, ê, g, ḫ, i, ī, î, k, l, m, n, p, q, r, s, ṣ, š, t, ṭ, u, ū, û, w, y, z

Gəᶜəz

The transcription method used in the Gəᶜəz section is based on the system employed in Wolf Leslau's "Comparative Dictionary of Geᶜez":[1]

አ	ዐ	በ	ደ	ፀ	ፈ	ገ	ሀ	ሐ	ኀ	ከ	ለ	መ
ʾ	ᶜ	b	d	ḍ	f	g	h	ḥ	ḫ	k	l	m

ነ	ፐ	ጰ	ቀ	ረ	ሰ	ሠ	ጸ	ተ	ጠ	ወ	የ	ዘ
n	p	ṗ	q	r	s	ś	ṣ	t	ṭ	w	y	z

The vowels are *a, u, i, ā, e, ə, o*, corresponding to the seven orders.

Amharic

The transcription method used in the Amharic section is based on the system employed in Wolf Leslau's "Reference Grammar of Amharic":[2]

አ/ዐ	በ	ቸ	ጨ	ደ	ፈ	ገ	ጐ	ጀ	ሀ/ሐ/ኀ	ኍ	ከ/ኸ	ኩ/ኹ	ለ	መ	ነ
ʾ	b	č	č̣	d	f	g	g^w	ǧ	h	h^w	k	k^w	l	m	n

ኘ	ፐ	ጰ	ቀ	ቈ	ረ	ሰ/ሠ	ሸ	ጸ/ፀ	ተ	ጠ	ወ	የ	ዘ	ዠ
ñ	p	ṗ	q	q^w	r	s	š	ṣ	t	ṭ	w	y	z	ž

The vowels are *ä, u, i, a, e, ə, o*, corresponding to the seven orders.

[1] Only the first order is given in this table, but it only serves to demonstrate how the consonants are transcribed.

[2] Only the first order is given in this table, but it only serves to demonstrate how the consonants are transcribed.

Arabic

The transcription method used in the Arabic section is based on Bo Isaksson ”Transcription of written Arabic”:[3]

ء	ا	ب	ت	ث	ج	ح	خ	د	ذ	ر	ز	س	ش	ص	ض	ط
ʾ	ā	b	t	ṯ	ǧ	ḥ	ḫ	d	ḏ	r	z	s	š	ṣ	ḍ	ṭ

ظ	ع	غ	ف	ق	ك	ل	م	ن	ه	و	ي	ـَـً	ـِـٍ	ـُـٌ	ة
ẓ	ʿ	ġ	f	q	k	l	m	n	h	w/ū	y/ī	a/an	i/in	u/un	a/at

Cairene Arabic

For the transcription of Cairene Arabic I follow the system used in Manfred Woidich’s “Das Kairenisch-Arabische” employing the following symbols:

ʾ, ʿ, a, ā, b, ḇ, d, ḍ, e, ē, f, g, ġ, h, ḥ, I, ī, k, l, ḷ, m, ṃ, n, o, ō, q, r, ṛ, s, ṣ, š, t, ṭ, u, ū, w, x, y, z, ẓ, ž

Hebrew

The transcription method used in the Hebrew section for transcribing Biblical and Mishanic Hebrew is based on the system employed in Lutz Edzard’s chapter on Biblical Hebrew in “The Semitic Languages – An International Handbook”:[4]

א	ב	ג	ד	ה	ו	ז	ח	ט	י	כ/ך	ל
ʾ	b/ḇ	g/ḡ	d/ḏ	h	w	z	ḥ	ṭ	y	k/ḵ	l

מ/ם	נ/ן	ס	ע	פ/ף	צ/ץ	ק	ר	שׂ	שׁ	ת
m	n	s	ʿ	p/p̄	ṣ	q	r	ś	š	t/ṯ

סִ/יִ	סֵ/יֵ/סֵה	סָ/יָ/סָה	סֶ	סַ	סָ	סָ/סָה	סָ	סוֹ/וֹ/סוֹ/סוֹה	סוּ/וּ/סֻ	סְ
i/ī	e/ē(h)	ɛ/ɛ(h)	ĕ	a	ă	å̆/å̆(h)	å̆	ō/ō(h)	u/ū	ə/Ø

The Israeli Hebrew is transcribed in a simplified version of the table above, rephonemizing the fricative variants of the bgdkft-letters:

א	ב	ג	ד	ה	ו	ז	ח	ט	י	כ/ך	ל	מ/ם	נ/ן	ס	ע	פ/ף	צ/ץ	ק	ר	שׂ	שׁ	ת
ʾ	b/v	g	d	h	w	z	ḥ	ṭ	y	k/x	l	m	n	s	ʾ	p/f	ṣ	q	r	ś	š	t

The vowels are given as *a, e, i, o, u*.

[3] Available at http://www2.lingfil.uu.se/afro/semitiska/forskarutbildning/transcription-of-arabicEN.pdf (visited 04.03.2012)

[4] Cf. Edzard, 2011.

1. Introduction

In this thesis I will work on the Semitic *binyan* system, the derivational templates that morphologically diversify verbal predicates in these languages. Mechanisms and nuances pertaining to the various levels of linguistics (phonology, morphology, syntax, and semantics) interrelate in these forms, and it therefore constitutes a focal point where many of the central issues of Semitic grammar may be discussed.

1.1. Aim

I will start with the morphological material itself, i.e. the templates forming verbal predicates, and from there map out what the functions of the various *binyanim* are and how they relate to each other. Going in the opposite direction, I will also attempt to explain why functions are cast in exactly that verbal template in which they appear. This is to say, I will approach the matter from two angles asking these questions:

> What are the phonological and morphological properties, and the syntactic, semantic, and pragmatic functions of a specific *binyan*?
>
> Are these unified by some common mechanism, and if so what is its nature?
>
> How does a specific *binyan* relate to the other *binyanim*?
>
> Why does a function appear within in the *binyan* it does?

I think a systematic treatment of functions expressed by each *binyan* in a language will reveal more precise underlying principles that license the more complex functions (such as the passive, reflexive, causative, etc.) and accommodate them.

In order to coherently describe the *binyanim* in a unified account that can explain isolated formations from a root as well as an array of derivations of another, I will first discuss properties and categories of verbal predicates in general, and how they come to be linguistic entities in the first place. Then I will consider the participants involved with them. Valency, as a property arising in the lexico-syntactic interface, will be discussed. Further, in the semantic-syntactic interface, we need an understanding of the concepts of transitivity, passivity, causativity, reflexivity, and reciprocity. These seem to be some of the categories of general linguistics that can most pertinently shed light on the phenomenon at hand, chief among them being transitivity. I will also introduce a theory of number that has been proposed specifically for the Arabic system, as an alternative view to put the theories used here in a larger perspective. For reasons of capacity and restricted space the investigation is limited to triradical verbs.

The Semitic languages that I will map out the diathesis systems of are Akkadian, Gəᶜəz, Amharic, Arabic (classical/MSA), Cairene Arabic, Hebrew, Aramaic, and Phoenician-Punic.

1.2. Material

I will rely heavily on theoretical work exploring the many aspects both of Semitic verbal templates and general linguistic concepts and attempts at establishing typological universals. As for language specific descriptions, I will use the standard grammars and dictionaries available, but there is no data collection at the core of this thesis, and examples will be drawn from dictionaries and grammars, so I will try to heed John Huehnergard and Jo Ann Hackett's warning and approach the lexicon with caution:

> *[…] one must continue to use the older dictionaries, but always with caution, always asking one's Arabist colleagues whether such-and-such a word really exists and really means what the old dictionaries – which all seem to be based on one another – say it means.*[5]

This is true beyond the classical Arabic dictionaries, because as one foregoes a corpus that provides statistics as an adjustment to mere haphazard wandering about in the linguistic landscape, one runs the risk of misinterpreting findings due to lacking context, and weighing evidence disproportionately, e.g. elevating an idiosyncrasy to the same level as a widely productive mechanism in the language etc.

1.3. Previous research

Some account of the *binyan* system is bound to be included in any grammar of a Semitic language, and these try to various degrees to shed new light on the subject. I will sketchily mention four approaches that have been used to look into the *binyan* system(s). These are the traditional view, and the work of three scholars. The list is by no means exhaustive, but highlights a few valuable approaches.

1. The traditional account has been to describe each *binyan* as basically conveying a single semantic-syntactic function, e.g. the reflexive, and relate every nuance of the *binyan* in question to it. This leads to some verbs being called exceptions when the material does not fit the *a priori* assumption,[6] and its explanatory potential is rather weak.
2. Edit Doron has introduced a different approach which she claims is applicable to all Semitic languages.[7] Her research is, however, limited to MH. She posits two dimensions of template heads. First, the agency dimension can be specified as Simple, Intensive, or Causative, giving

[5] Huehnergard & Hackett, 2009, pp. 229-230
[6] Examples of this approach are Wright, 1896-98 and Gesenius, 1910.
[7] Doron, 1999, Doron, 2003, and Doron, 2003.

the roles Agent, Actor, and Cause. Secondly, the voice dimension can be Simple, Middle or Passive. The combinations of these template heads account for the entire system in this approach. Its major weakness is that it posits complex functions (such as the passive) as basic building blocks in the system.

3. Reut Tsarfaty wrote a master's thesis applying Event Calculus to IH material, and this approach yielded substantial results regarding the *Aktionsarten* of the *binyanim*, and how such verbal aspect interacts with them.[8]
4. Finally, the approach to the system that most respects the material and does not try to impose theories and Procrustean methods on it, is Jan Retsö's investigation "Diathesis in the Semitic Languages".[9] His work maps how various functions are expressed morphologically, such as the passive, causative etc.[10]

2. Theoretical framework

There is no consensus on the proper label for the phenomenon I am dealing with in this thesis. In an attempt to avoid *stem*, which would in the Semitic context be a somewhat different entity than what is designated by this term in Indo-European linguistics, various scholars apply all kinds of terminology. The term used in Hebrew grammar, *binyan* (plural *binyanim*)"building" has a certain currency. *Verbal theme, modification, conjugation, form, pattern, degree, class* have all been proposed, but I think they are even more misleading than *stem*.[11] Kees Versteegh uses the designation *measure*,[12] probably translating the term used in traditional Arabic linguistics: *wazn*, and Igor M. Diakonoff employs the term *stirps* (plural *stirpes*) evoking the relatedness of the various manifestations of a common root.[13] Jan Retsö calls the phenomenon *diathesis* based on its function:

> *[...] a type of construction involving the relations between the verbal kernel of a sentence and its nominal elements. These relations may be analyzed both in semantic and morpho-syntactic terms. A covering term for the semantic relations and their morpho-syntactic representation is diathesis.*[14]

I think we have come full circle, and the term *stem* seems as appropriate as any. The biological origin that makes this term inadequate in the opinion of Wilhelm Gesenius and/or Emil Kautzsch is rather an interesting starting point when one accepts the relevance of the root in Semitic:

[8] Tsarfaty, 2004
[9] I should acknowledge at this point that the title of this thesis is borrowed from Retsö's book.
[10] Retsö, 1989
[11] For an overview of which scholar has introduced or used which term see Kouwenberg, 2010, p. 246.
[12] Versteegh, 1997, p. 87
[13] Diaknoff, 1988, p. 104
[14] Retsö, 1989, p. 1

> *[The root] represents the common foundation of the verbal and nominal stems developed from it, just as in the vegetable world, from which the figure is borrowed, stems grow from the hidden root[.]*[15]

Some stems are morphologically derived from other stems, but such "offshoots" are not really contradicted merely by the term *stem*. I will use the terms *stem* and *binyan* interchangeably to denote each separate consonantal makeup of a root that can be used to form verbal predicates, and the vocalic patterns that are interfused with them to the extent that these also contribute to the diathetic system.[16] The term *diathesis* is also used, in accordance with Retsö's definition above.

2.1. What is a *binyan*?

I take the term *binyanim* to mean various morphological templates for verbal predicates. We must assume that the various morphological forms signal some variation on a different linguistic level, and that the choice of *binyan* therefore is never random. Whether the principle governing the system is phonological well-formedness, eventuality type, aspect, participant relations, pragmatic focus, or something completely different, we need an understanding of what verbal predicates encode in general so that we then may investigate how they differ from one *binyan* to another in the Semitic languages. To this end the relationship between non-linguistic *situations* and the linguistic entities encoding them will be discussed in 2.2. The participants in these situations, and how they are represented at various linguistic levels are discussed in 2.3, and in section 2.4 I will look closer at the relations between such participants in the semantic-syntactic interface. Finally, in 2.5, I will lay out a comprehensive theory of what a *binyan* is, and at which linguistic level(s) it operates.

In addition to such an understanding of what the phenomenon of the *binyanim* is, a theory of the *binyanim* system in each Semitic language should at least account for these problems:

- What is the function of each *binyan*?
- Why does an *eventuality* appear in a specific *binyan*?
- What are the relationships between the *binyanim* (overlaps, oppositions, internally linked subgroups etc.)?
- Is there a basic *binyan*, and if so which is it?
- Are there instances of *deponency* within the system?

These questions will be elaborated in section 3 on methodology.

[15] Gesenius, 1910, p. 100. This is the view refuted by Gesenius/Kautzsch.
[16] This includes Ablaut forms, cf. 4.1.2, and vowel classes.

2.2. Eventualities

To start out, a model of how real-life situations are articulated into linguistic entities is necessary. Real-life in this context is rather an extra-linguistic, or pre-linguistic, reality. It does not imply that the situations described necessarily have taken place. They can be imaginary, counter-factual, or subjectively assumed. A *situation* is therefore taken to be a mental construct, incorporating information of in principle infinite measure or complexity. The first step in an articulation process is that a *situation* is cast as a linguistic entity. This means limiting the situation and determining its subcategorization. In a linguistic expression of a *situation* there are many constraints on what information can be conveyed, and the process is therefore a form of abstraction.[17] In order to keep the levels of abstraction distinct I will use the following terminology:

Level	**What *is* or *happens***	**Who/what participates**
extra-linguistic mental construct	situation core	participants
non-language specific linguistic entity	eventualities[18] (states and events)	participants
typological strategy	predicate	arguments
language-specific construction	verb	complements, adjuncts

Table 1

The initial linguistic level (the non-language specific linguistic entity) is the first abstraction. As some information has been chosen to form the basis of a linguistic expression of a situation and some has been discarded the information and structure at this level is finite and can be categorized. The classes of eventualities have been the topic of many works since Aristotle's division of actions in ἐνέργεια and κίνησις,[19] and the categories of eventualities proposed have implications for logic and philosophy, as well as linguistics. I will devote some paragraphs to discussing fundamental categories of eventualities and their properties.

In Zeno Vendler's seminal paper "Verbs and Times", published in 1957, he divides all predicates into four categories, beginning the tradition of event structure, which in turn is linked to lexical aspect,[20] and from which event calculus[21] is developed:[22]

[17] Lehmann, 2006, p. 163

[18] *Eventuality* serves as a cover term that includes both states and events. It is perhaps not the most transparent terminology, but in meta-language like this the most important thing is to apply the labels (whatever they are) strictly and precisely, cf. Bach, 1986, p. 6. Note that *events*, confusingly, often appear as the label for what is here applied as its hyperonym.

[19] Cf. Methaphysics Θ 6, 1048b 18-28, tr. Tredennick.

[20] This is often called *Aktionsart* to distinguish it from grammaticalized aspect, cf. Crystal, 2008, p. 38.

[21] Event Calculus is a formalism that has been applied to language to study aspect and tense. The most elaborate application is made in van Lambalgen & Hamm, 2005, and this served as the theoretical foundation for Reut Tsarfaty's master's thesis Tsarfaty, 2004 on the grammatical aspect in IH that I have mentioned, and to which I will refer when examining the Hebrew *binyan* system.

1. Activities (Zayd runs.)
2. Accomplishments (Zayd crossed the street.)
3. Achievements (Zayd arrived at the station.)
4. States (Zayd is tall.)

The importance of this scheme is the identification of *homogeneity* and *telicity* as basic properties of eventualities. For a formal account of *homogeneity* I use Antonia Rothmayr's definition:

> *[H]omogeneous predicates […] have the subinterval property. That is, if a predicate is true at a certain time interval, it is also true for any subpart of this interval.*[23]

I think that the subinterval property illustrates how the transfer from situation to eventuality, i.e. the initial linguistic articulation, operates. In fact, the subinterval property works differently on the two levels. First, it can be used to distinguish states from events, as Rothmayr, and to a certain extent Vendler,[24] do. This makes activities non-homogeneous because a clause like *Zayd runs* might be interpreted as something he does habitually, but not 24 hours a day. Even if the clause describes *Zayd* as he is out running, we might argue that in the fraction of a second that both his feet leave the ground at the same time he is not really *running*, but rather *flying* or *falling*. The important difference is that for states the subinterval property is absolute. Secondly, I think we could use the subinterval property to describe linguistic eventualities in such a way that even activities could be included in the definition. In the clause *Zayd runs every day* we are in fact concerned with expressing linguistically that Zayd takes a run every day, and not what he does between his runs (or indeed when both his feet leave the ground). This linguistic variant of the subinterval property could more properly distinguish accomplishments from the three other categories because that is the only kind of event where two different states are used to build up the event. An accomplishment is essentially an activity plus an achievement. In the example above Zayd first performs the activity of crossing, and the the achievement of arriving on the other side of the street. The subinterval property could therefore not be seen to hold for such events under any circumstance, once cast as linguistic entities. All this means that the rather contrived objections to the homogeneity of activities stem from the vast amount of information we have about the situation (as a non-linguistic mental construct), and the simplification that is implied in abstracting the situation to become a linguistic eventuality discards that information.

To illustrate this situation better we can classify the four situation-eventualities by ±homogeneity and ±telicity. The values are only approximates for situations, as they can be just

[22] Vendler, 1967, p. 106. This is a collection of papers in which the 1957 paper "Verbs and Times" feature. The examples in parentheses are my own.
[23] Rothmayr, 2009, p. 3
[24] Vendler, 1967, p. 106

about anything, and might not even be classifiable as activities, accomplishments, achievements, or states:

	Situation	Eventuality
States	+homogeneity -telicity	+homogeneity -telicity
Activities	-homogeneity -telicity	+homogeneity -telicity
Achievements	+homogeneity +telicity	+homogeneity +telicity
Accomplishments	-homogeneity +telicity	-homogeneity +telicity

Table 2

So far we have established that eventualities carry the properties *homogeneity* and *telicity* as they are raised to linguistic entities. It is evident that the eventuality type will in part be dependent on the context and it is therefore impossible to ascribe it to verbs in isolation. It is a property of the clause, and changes in the clause may affect the eventuality type.

Many variations on Vendler's classification have been proposed, and I will not go through them here,[25] but skip to one of the most recent approaches which may elaborate further points that can be used in understanding the *binyan* system. Van Lambalgen and Hamm's "The Proper Treatment of Events" classifies six event types, and calls them *Aktionsarten*,[26] according to these four parameters:[27]

1. ± Activity exerting force
2. ± Change in object or state driven by the exertion of force
3. ± Canonical goal taken as inherent terminal point
4. ± State of having achieved the goal

Assigning ± gives the following categorization:[28]

Aktionsart	Example	Configuration[29]
States	know, love, be happy	[---+]
Activities (strict)	sit, stand	[+---]
Activities (wide)	run, push cart	[++--]
Achievements	begin, notice, reach	[--++]
Accomplishments	cross the street	[++++]
Points	flash, spot, blink	[--+-]

Table 3

The important additions are the recognition of a *point* configuration, and of the *incremental theme* that distinguishes two types of *activities*. With *activities* in the *wide* sense a theme (like the position

[25] Summaries can be found in Rothmayr, 2009, pp. 3-8 and Tenny & Pustejovsky, 2000.
[26] This is the sense in which I will use this term from now on.
[27] van Lambalgen & Hamm, 2005, p. 86
[28] Ibid., p. 88. The examples must be seen as either approximates or taken to have a default *Aktionsart*, that holds if nothing else in the clause changes it, as the context partly determines it. They are drawn from Tsarfaty, 2004, pp. 50-51.
[29] These ± configurations refer to the four parameters above.

of the cart one is pushing) changes gradually with the progression of the activity, even though there is no inherent terminal point in the event.[30]

If we translate these parameters, and incorporate the homogeneity parameter from Table 2, into elements of the eventualities, we could say that the exertion of force entails a *subject*, lack of homogeneity entails an *action*, the inherent terminal point entails an *object*, and the state of having achieved the goal entails a *result*. From this we get the chain of elements presented in Table 4 of the four Vendlerian event types.[31] These can be read chronologically from left to right, e.g. an Accomplishment can be read as "someone performs an action in relation to something and one of the elements enter a new state".

States							Result
Activities	Subject	>	Action				
Achievements			Action	>	Object	>	Result
Accomplishments	Subject	>	Action	>	Object	>	Result

Table 4

Van Lambalgen and Hamm also discuss *coercion* which is the casting of an eventuality in a different *Aktionsart* than its default association. A state may for instance be coerced into an activity reading by the English progressive in:

She resembles her mother. > She is resembling her mother more and more every day.[32]

This, I think, will prove useful in describing the individual *binyanim*, as *binyan* change in many cases seems to coerce the eventuality, e.g. a state (in the Hebrew G-Stem) being cast in the N-Stem would be coerced into an achievement as an inchoative reading arises: (IH) *yada* "to know" > *noda* "to be(come) know" in the clause *hasipur noda biglal hakatava baʾiton* "The story became known due to a newspaper article."[33]

2.3. Participants

A clear understanding of how participants in a situation function at various levels of abstraction is necessary if we are to describe adequately how they interact or are coded or referenced in the *binyan* morphology and syntax, and especially how the mechanisms that alter the focus on these participants operate. To describe participants I will make use of Christian Lehmann's lucid outline of

[30] van Lambalgen & Hamm, 2005, p. 88
[31] Strict activities pattern with states, and points with achievements.
[32] van Lambalgen & Hamm, 2005, p. 173
[33] Tsarfaty, 2004, p. 175

the subject at hand, "Participant roles, thematic roles and syntactic relations". [34] He uses three levels of representation to describe participation:[35]

Level	Type of entities	Example of components	Roles
cognitive-referential	cognitive & communicative domains	situation: situation core, participants	participant role
typological	strategies	proposition: predicate, arguments, relators	thematic (macro-)role
language-specific	structures	sentence: verb, complement, adjunct, case	syntactic function + significatum of case relator

Table 5

The cognitive-referential level is the mental construct that represents a situation, essentially corresponding to the level of the extra-linguistic mental construct discussed in 2.2. It is more complex than a linguistic expression of the situation can be under any circumstance, and it is at this level the reference point must be situated when one translates between languages. The two lower levels are linguistic and as the situation with its participants, and any other aspect that can be given a linguistic expression, is mapped onto a proposition, languages divide themselves as to how this is done, and the strategies applied form the basis of typology. Finally, the thematic (macro-)roles are mapped onto syntactic structure, and we end up with the situation expressed in a specific language. This process engender a further simplification as the material available to express the various roles (both on the noun phrases and as coreference on the verb) is limited, as best exemplified in the fairly few categories of the Semitic *binyan* system, and expecting it to separately distinguish a wide array of complex functions, such as the passive, reflexive, anticausative etc. seems a tall isomorphic order. I think we should leave the possibility open that limited morphology, such as the *binyan* system in a Semitic language, may encode a wider or cruder distinction, e.g. affectedness of the subject, regardless of the origin of the affectedness.

Returning to the cognitive-referential level, we will now look closer at how participants are built up, and what information at this level that may be encoded into language. The participants, at this level of abstraction, have *properties* and *roles*. The former are, according to Lehmann, ordered in an empathy hierarchy, which is built up like this:[36]

[34] Lehmann, 2006
[35] Ibid., p. 154. This table is also the basis for Table 1 above.
[36] This is similar to the Animacy Hierarchy or the Nominal Hierarchy, cf. Dixon, 1994, p. 85, but Lehmann maintains that empathy is the determining factor for the levels of the hierarchy. Lehmann, 2006, p. 157.

SAP(1)[37]	non-SAP(2)					
human		non-human(3)				
animate			inanimate(4)			
individual object				substance(5)		
object					location(6)	
entity						proposition(7)

Table 6

These properties are independent of the situation, and their contribution is to condition what roles the entities possessing them can take. The higher levels can more easily be construed as affected, for instance. A location is seen as less affected by the situation it participates in than a person. The hierarchy is markedly anthropocentric. We are more concerned with how we and our companions are involved with the world around us than the entities that resemble us less.

The relations between the participants are complex networks integral to the make-up of the situation, but when these relations are derived into more generic categories we end up with the *roles* of the participants. Lehmann chooses to order these roles according to two general parameters: *involvement* and *control*,[38] both being gradable and relative. The *involvement* cline arches from maximal involvement, where the participant is essential for the situation to be conceivable, to the minimal involvement, where the participant is more involved in a connected situation than the one at hand. On the linguistic levels maximally involved participants tend to be more often represented by complements, while less involved participants may appear as adjuncts, in oblique cases, as dependents of additional verbs etc. As for *control*, it is a relative parameter ranging from the highly controlling *actor* to the highly controlled *undergoer*. Configurations of these *properties* and *roles* makes for fourteen types of participants with eleven different combinations of features as seen in Table 7:[39]

[37] Speech act participant, i.e. first or second person.

[38] Note that this is related to the two-fold categorization of ±Volition and ±Instigation that Åshild Næss proposes, and that I will properly introduce and discuss in 0 below. Næss' parameters would, however, be used on a linguistic level (corresponding to the typological level of Lehmann), cf. Næss, 2007, p. 45. Instigation is the more controlling parameter for Lehmann, as the intention is only secondarily introduced in the notion of *agent*.

[39] Adapted from Lehmann, 2006, p. 159. The empathy categories (1-7) correspond to the hierarchy in Table 6. Shaded cells are the possible ones for each participant, and dark cells mark the prototypical empathy level. *Involvement* is marked [+] for central and [-] for peripheral, and *Control* is marked [+] for control and [-] for affectedness. [*] means 'not specified'.

Role	Empathy							Involvement	Control
	1	2	3	4	5	6	7		
agent								+	+
force								+	+
comitative								-	*
instrument								-	*
experiencer								*	*
emitter								*	*
source								*	*
recipient/addressee								*	*
goal								*	*
sympatheticus[40]								+	-
patient								+	-
beneficiary								-	*
place								-	*
theme								+	*

Table 7

We can see from the table that experiencers, emitters, and recipients/addressees share configuration, as do source and goal.

At the typological level we are concerned with how participant roles are structurally linked to the predicate. The two basic strategies for such linkage are verbal valency in the form of complements more or less directly governed by the predicate, and peripheral linkage by means of an adjunct or a relator. If participant roles were the only element conditioning the linguistic expression we would get a very clear-cut mapping throughout the levels, as represented in Table 8:

Type of entities			
participant roles	agent	patient	recipient
macroroles	actor	undergoer	indirectus
syntactic roles	subject	direct object	indirect object

Table 8

The three macroroles, viz. actor, undergoer, and indirectus, find their prototypical representation in the three participant roles agent, patient, and recipient respectively, but they are also "the goal of the neutralization of peripheral roles".[41] Furthermore, macroroles can be umbrella terms for an array of participant roles. An actor can easily be for example agent, benefactor, and possessor at the same time. This is, according to Lehmann, what gives rise to increasingly finer and progressively less discernible distinctions of variants of for instance the dative as a case in an expression.[42] That is to

[40] This participant role is part of the Dative in Givón, 2001, p. 107. Lehmann defines it as "the role of an empathic patient that is affected if its part is affected", e.g. the horse in *She washed the horse's mane*, cf. Lehmann, 2006, p. 164.

[41] Lehmann, 2006, p. 160

[42] Ibid., p. 164

say, the fact that a complement of the verb can accumulate several participant roles reduces its transparency at higher levels of abstraction.

In order to coherently describe the clauses discussed in this thesis without prematurely ascribing macroroles before an analysis has taken place, I will adhere to the following conventions:

- The sole argument of an one-participant clause is called S.
- The two arguments of a two-participant clause are called A(gent) (the most agent-like participant) and O(bject) (the most patient-like participant).[43]

These are essentially syntactic labels, denoting the relationships between the predicate and its arguments. It should be noted that I apply wider definitions than for instance Dixon, who would limit S to formally intransitive clauses, and A/O to formally transitive clauses,[44] not including objects introduced by prepositions for instance. As regards the predicate, it will be called *predicate* or *verb* at the syntactic level, and in this thesis I am in any case only concerned with verbal predicates. When these two basic patterns are extended by a second/third participant that is afforded some special syntactic status, we call this participant E(xtension to core).[45] In our discussion only extension to A/O two-participant clauses will feature. Here follows some example sentences in English and the labels of the constituents at the semantic and syntactic level, in order to illustrate the terms in use:

	Zayd	**killed**	**the cat.**
Semantic	Agent	event	Patient
Syntactic	A	predicate	O

Table 9

	Zayd	**died.**	**Zayd**	**laughed.**
Semantic	Patient	event	Agent	event
Syntactic	S	predicate	S	predicate

Table 10

	Zayd	**gave**	**the cat**	**a herring.**
Semantic	Agent	event	Beneficiary	Patient
Syntactic	A	predicate	E	O

Table 11

[43] P(atient) is also regularly used for the O. These labels are designed to circumvent the problems inherent in the label subject when discussing both accusative and ergative languages. Any use of the term *subject* in this thesis refers to the most prominent syntactic argument, whether it is S or A.

[44] Dixon, 1994, p. 6

[45] Dixon & Aikhenvald, 2000, p. 3

2.4. Relations between the participants at the semantic and syntactic levels

2.4.1. Valency

Valency is an attribute of a predicate (verb, noun, adjective, preposition) denoting its potential for combining with arguments.[46] For this thesis only verbal valency is relevant. We should reserve the term valency for exactly this concept of slots associated with a verb. It does not matter, in this case, whether arguments are combined directly within a core case-frame or by means of prepositions or similar devices. This means that transitivity must be kept separate from valency. A formally intransitive clause, i.e. a clause where the predicate does not govern an internal argument/direct object, will most often be univalent, but there is no direct correlation between the two labels. The confusion stems from the use of the term *transitive* as both a gradable semantic parameter, and as a binary syntactic parameter (what is referred to as formally or syntactically intransitive/transitive here). The various number of arguments that verbs can take categorize valency in four subgroups:

Valency	Example
Zero-valent	It rains.
Univalent[47]	John runs. John sleeps.
Bivalent	John hits David. John browses through the book.
Trivalent	John gives David a book. John puts the cat in the basket.

Table 12

The valency of a verb seems to be a lexical property, and although there are reasons to assume that semantic properties of the event that is codified in the verb influences how it is assigned valency, there are no absolute correspondences on this point across languages. The same event can be lexicalized as univalent in one language and bivalent in another.

Languages also apply a host of valency-alternating mechanisms. These can be valency-changing, of two types (valency-reducing and valency-increasing), or valency-preserving. The latter applies when a mechanism alters the valency of a verb, but the output has the same number of arguments as the input.[48] This means that we take valency to be both a quantitative and qualitative property of a verb. It sub-categorizes for various types of slots in addition to the number of such slots.

[46] Humphreys, 1999, p. 391
[47] This is usually called *monovalent*, but it would perhaps be better to use a Latin prefix as the stem is Latin. The same is true for *bivalent* which normally appears in the literature as *divalent*.
[48] Humphreys, 1999, p. 391

Typical valency-reducing alternations are bivalent > univalent constructions, such as passives, anticausatives and antipassives:[49]

Construction	Input	Output
Agentless passive	Zayd broke the glass.	The glass was broken.
Anticausative	"	The glass broke.
Patientless antipassive	Zayd ate the mango.	Zayd ate.

Table 13

Typical valency-increasing alternations are univalent > bivalent constructions, such as causatives and applicatives:

Construction	Input	Output
Causative	Zayd sings.	ʿAmr makes Zayd sing.
Applicative	Zayd was smarter than ʿAmr.	Zayd outsmarted ʿAmr.

Table 14

2.4.2. Prototypical transitivity

The notion of TRANSITIVITY is ubiquitous in descriptive (and for that matter normative) grammar. It most commonly denotes a combinational property of verbs, i.e. their ability to govern a direct object. The verb is thus classified as *transitive*/*intransitive* based on the presence or absence of such an object in clauses where it forms the predicate. The concept is sometimes refined by introducing the terms *bitransitive* and *ambitransitive* to describe clauses with both indirect and direct objects and clauses where the object is optional, respectively. There are, however, advantages in abandoning this strictly formal categorization in favor of a semantic approach to transitivity where certain parameters, some of which should themselves be gradable rather than binary, can be invoked to describe relative transitivity. Such an attempt was made by Paul J. Hopper and Sandra A. Thompson in their seminal paper "Transitivity in Grammar and Discourse",[50] and I will provide a layout of their ideas here as I believe an elaborated concept of transitivity will prove very useful in capturing the mechanisms of the diathetic variations encoded in the *binyan* system of the Semitic languages.

To the extent that semantic properties have been discussed alongside formal ones in traditional accounts of transitivity, it has defined the notion as the effective 'transfer' of an action from an agent to a patient. This intuitive approach is systematized in ten parameters of transitivity by Hopper and Thompson:[51]

[49] Adapted from Dixon & Aikhenvald, 2000, pp. 7, 10
[50] Hopper & Thompson, 1980
[51] Ibid., 1980, p. 252

		High transitivity	Low transitivity
A.	PARTICIPANTS	2 or more participants A and O[52]	1 participant
B.	KINESIS	action	non-action
C.	ASPECT	telic	atelic
D.	PUNCTUALITY	punctual	non-punctual
E.	VOLITIONALITY	volitional	non-volitional
F.	AFFIRMATION	affirmative	negative
G.	MODE	realis	irrealis
H.	AGENCY	A high in potency	A low in potency
I.	AFFECTEDNESS OF O	O totally affected	O not affected
J.	INDIVIDUATION OF O	O highly individuated	O non-individuated

Table 15

At least AGENCY, AFFECTEDNESS OF O, and INDIVIDUATION OF O must be seen as continuums. This is partially true for TELICITY as well.

On the basis of Table 15 Hopper and Thompson make the following observation on the relationship between the parameters:

> *[W]henever an obligatory pairing of two Transitivity features occurs in the morphosyntax or semantics of a clause, THE PAIRED FEATURES ARE ALWAYS ON THE SAME SIDE IF THE HIGH-LOW TRANSITIVITY SCALE.*[53]

This is formalized in a Transitivity hypothesis:

> *If two clauses (a) and (b) in a language differ in that (a) is higher in Transitivity according to any of the features 1A-J, then, if a concomitant grammatical or semantic difference appears elsewhere in the clause, that difference will also show (a) to be higher in Transitivity.*[54]

This does not mean that transitivity is always formally expressed, but when it is it draws a divide so that the [High] values in Table 15 might be within the transitivity marking, and the [Low] features might be outside it, but never the other way around. Hopper and Thompson do not posit a common semantic denominator that would unite the various parameters in the table, in fact they explicitly state that it has not been found yet.

This is the departure point for Åshild Næss' treatment of prototypical transitivity, developed in her doctoral thesis and published in a revised version as "Prototypical Transitivity" in 2007.[55] I think her approach to transitivity can yield significant results when applied in an analysis of the

[52] The A(gent) and O(bject) are Hopper and Thompson's terms (following Dixon 1979) denoting the participants in two-participant clauses, cf. section 2.3.
[53] Hopper & Thompson, 1980, p. 254
[54] Ibid., p. 255
[55] Næss, 2007

Semitic *binyan* system. She shows that Maximal Distinctness of Arguments is the underlying unifying principle among the transitivity parameters, summed up in this hypothesis:

> *A prototypical transitivity clause is one where the two participants are **maximally semantically distinct** in terms of their roles in the event described by the clause.*[56]

She recasts the components of Hopper and Thompson's theory into three binary parameters that characterize the participants in two-participant clauses. These are [±Volition] that classifies whether the participant consciously wants or allows the action to take place, [±Instigation] that classifies whether the participant is the one carrying out the action, and [±Affectedness] that classifies whether the participant goes through some change-of-state as a result of the action.[57]

Prototypical transitivity within this framework appears in a clause where the A is [+VOL, +INST, -AFF] and O is [-VOL, -INST, +AFF]. The Maximal Distinctness of Participants lies in the diametrically opposite values of the parameters assigned to A and O. An illustrating example, adhering to the Semitist tradition of violent sample sentences, would be the Arabic *qatala zaydun ʿamran* "Zayd killed ʿAmr". The positive values mean that Zayd wants to kill, he carries out the action, and ʿAmr bears the consequences as he undergoes a complete change-of-state from living to dead, while the negative values must be read as Zayd not being affected by the killing, and ʿAmr neither wanting it nor instigating the action. The relationship between [+INST] in the A and [+AFF] in the O covers the intuitive meaning of transitivity in that it accounts for a 'transfer' of the action. It should also be noted that Volition and Instigation often appear in the literature as Control. It is however useful to distinguish them as some languages may code volition as in the German example *mir ist der Teller zerbrochen* "I broke the plate accidently"[58] where the dative marks the A as [-VOL, +INST].

Deviations from this prototype may or may not incur marking in languages. Næss goes on to discuss such deviations systematically, one constituent at a time:

[56] Emphasis in the original. Næss, 2007, p. 30

[57] I refer to these three parameters throughout the thesis. When discussing them generally I use their full label with initial majuscule, e.g. Instigation, and when specifying a value I use the abbreviations in square brackets, e.g. [+VOL].

[58] Cited from Næss, 2007, p. 39.

Feature combination			Thematic relation
Volition	**Instigation**	**Affectedness**	
+	+	-	Agent
-	-	+	Patient
+	+	+	Affected Agent
+	-	+	Volitional Undergoer (recipients, beneficiaries, experiencers)
-	+	-	Force
-	+	+	Instrument
+	-	-	Frustrative
-	-	-	Neutral

Table 16

The binary values may obfuscate some of the finer nuances of the system. The affected agent is a case in point. Næss argues at length for just this parameter combination, i.e. [+VOL, +INST, +AFF], for the A of ingestive verbs. In a clause like "John ate dinner" the food in "dinner" is the object and it is indeed made up semantically as a patient with [-VOL, -INST, +AFF]. But the point of carrying out this action was presumably not to affect a change-of-state in the food. This means that the Volition part was not really directed towards this patient. The intended effect of the action was to satiate John, the agent, and his change-of-state from *hungry* to *full* is seen as more important than the fact that the food was masticated and ingested. The A is therefore semantically characterized by all three values being positive. This holds even for other verbs besides ingestives, and some languages may choose to mark this in their morphosyntax in some way. Take the verbs for "to vomit" in Arabic and Swedish for example:

Arabic	taqayyaʾa
Swedish	kräkas

Table 17

The Arabic verb appears in the tD-Stem, often used for the reflexive which is a function where the agent is also the patient, or more precisely the A is [+VOL, +INST, +AFF]. It is not surprising that vomiting could also be cast in this stem as the most affected participant, it could be argued, is the person vomiting and not the contents of the stomach. In the case of Swedish the verb is deponent, taking a passive form. The passive is of course also a mechanism that focuses on the affectedness of its main argument, and it could be argued the act of vomiting is often involuntary and not really instigated. The Swedish verb, being passive in form, cannot take a direct object to indicate what was vomited. It would in that case be changed to a corresponding active *kräka upp* with a preposition introducing the second affected entity, and this construction serves to markedly highlight exactly this entity.

The volitional undergoer is the participant that allows the action to which it is submitted, but does not perform it. This captures beneficiaries, recipients, experiencers, and some causees.

The force argument is thus named because it captures the role of natural forces. In a clause like “the tornado destroyed the house” the A (the tornado) instigates the event, but it cannot be regarded as volitional. Volition is not relevant when the participant is inanimate. The [-VOL] also captures involuntary acts like breaking the plate in the German example above.

As for instruments, they are seen as participating in a causative event where they are the patient of the causation and the agent of the caused event. Being both inanimate and not the ultimate cause it, takes the [-VOL], and as it is manipulated in the causation it takes [+AFF]. In the caused event it is the participant carrying out the action and therefore takes the [+INST].

The frustrative marks the A of an event that is willed, but not carried out. This has the implication that if there is an O it cannot be affected. Interestingly, this is the result of negation, and to a certain extent the irrealis mood. Such value switches will be treated further on.

The neutral would be objects that are seen as unaffected, or relatively less affected than highly affected objects. Location or stimulus arguments can be seen as neutral, e.g. “John entered the room. John loves Mary.”

The connection between these argument categories, as described by Næss, and the transitivity parameters outlined by Hopper and Thompson is not self-evident. I will therefore examine the ten parameters (A.-J.) in Table 15 again in order to relate them to the three-way binary patterns of Næss’ arguments. Firstly, PARTICIPANTS of both one-participant and two-participant clauses may be characterized by the eight thematic relations of Næss’ system, but as the hypothesis underlying her proposal is that prototypical transitivity is characterized by maximal distinctness of participants, and the three parameters are chosen in order to maximally distinguish the two participants of a highly transitive clause, there is the risk that they will not be the most relevant parameters to describe one-participant clauses. Secondly, KINESIS can be seen as basically distinguishing states from events, but also distinguishing between events that assume a spatio-temporal manifestation and others that do not, i.e. so-called mental verbs like “understanding, concluding” etc. Stativity is incompatible with transfer, so the relation between Instigation and Affectedness is irrelevant for states. It should be noted, however, that the S of a state must be said to be [+AFF], but not due to some Instigation. That being said, if KINESIS is to be seen as a gradable property, the mental verbs that are closer to non-actions than actions can take arguments that differ from the transitivity prototype, e.g. “John loves Mary” where the A is a volitional undergoer and O is neutral. Thridly, TELICITY is linked to properties of the object. An indefinite object leads to an atelic reading, and a highly individuated, definite, singular object can more easily take a telic reading because the complete affectedness of the object, which would be the goal, and must be the

intention of the agent, is more easily construed. Næss also takes plural objects to be less telic, but as we shall see I think this might not necessarily be the case. A plural object may on occasion be a marker of a more extensively transferred action. When TELICITY is reviewed in connection with the affected agent clauses discussed above, we can see that it is in fact linked to some entity being affected, and in the case of ingestive verbs it is the agent that is most prominently affected and can be the measurement of TELICITY. Consider the sentence: *I ate in five minutes, then rushed off to work*.[59] Although no object is mentioned, the complement of duration shows the first clause to be telic. It is the saturation of the agent that is the intention behind the action, and it therefore constitutes the goal. Fourthly, PUNCTUALITY is also linked to affectedness because although Næss applies a binary distinction to the [±AFF], this property is gradable, and something can be partly affected. A punctual event, on the other hand, can only be an instantaneous switch from unaffected to affected, at least as affected as the event in question permits. This links PUNCTUALITY to the high transitivity complete [+AFF].

VOLITIONALITY is the same parameter as Næss' Volition. A mentioned, AFFIRMATION and MOOD are clause properties that may shift [+AFF] to [-AFF]. AGENCY is the potentiality for Instigation with the agent, and AFFECTEDNESS OF O exactly corresponds with the Affectedness parameter. Finally, INDIVIDUATION OF O, as mentioned above, has to do with the distinctness of the patient against the general background. Some languages mark such distinctness by affording special status to definite objects, e.g. Hebrew by means of the *nota accusativi* *ʾɛt̲*.

I think that significant new discoveries can be made when applying Næss' ideas on the *binyan* system, because determining which deviations from the prototype that pattern together can unify the *binyanim* further.[60] The binary property of the parameters should be seen as a simplification. They are relative and gradable, so I will use expressions such as *more [+AFF]* etc. It is also possible for various mechanisms in languages to weigh these parameters differently. A construction may for instance be said to *focus on the [+INST]*.

2.4.3. Intransitivity

Having explored transitivity, the question arises: What about formally intransitive verbs? How are they to be subclassified? And is there a prototype, similar to the transitive prototype, that we can posit as standard, and from which we can derive deviations? From Hopper and Thompson's perspective there is really no such thing as semantic intransitivity, because there is only a cline of transitivity with relative values of high(er) and low(er) transitivity.

[59] Næss, 2007, pp. 77-78

[60] I think several problems in the verbal grammar of Semitic languages can be illuminated by this approach, not least the classical waw-consecutive discussion in BH, but that lies beyond the scope for this thesis.

Leaving stative verbs aside for the moment, we turn to the terms *unaccusative* and *unergative* verbs that are often invoked to describe a fundamental distinction between two groups of intransitive verbs. The former are said to take an argument similar to the patient of a transitive verb, and the latter an argument similar to the agent of a transitive verb:[61]

Unaccusative	S = O	John fell.
Unergative	S = A	John ran.

Table 18

These labels are not used with stable definitions throughout linguistic studies, and although some claim they show cross-linguistic variation, and must be defined by some test in each language, there are also attempts to demonstrate their volatility and uselessness in describing linguistic phenomena.[62] Without attempting to provide a definite and unobjectionable solution in this case, I propose to transfer Næss' transitivity parameters to intransitive verbs. In that case the typical configurations of the S would be:

Unaccusative	S = O	John fell.	[VOL-, INST-, AFF+]
Unergative	S = A	John ran.	[VOL+, INST+, AFF-]

Table 19

As no one else in the clause is affected, the property of Affectedness for unergatives may well be [+AFF] as well. A major weakness of this approach is the complete disregard for Næss' underlying hypothesis of Maximal Distinctness of Participants. The parameters do not distinguish anything, except mark the difference between unaccusatives and unergative classes of intransitive verbs, and that only amounts to a circle argument. I will, however, use these terms with this content as descriptive tools in the analysis.

2.4.4. Passivity

Passive voice and passivization are discussed throughout grammatical literature, and an endless array of approaches to the phenomena subsumed under this heading have been proposed, but we should note that Anna Siewierska, in her thorough treatment of this grammatical category, concludes that:

> *[…] the term passive has been extended to cover a wide range of structures. Although, when each of these passives is compared to the canonical passive the label passive seems justified, there being at least one property that unites the two, as a group the whole body of so-called passives does not have a single property in common.*[63]

[61] This would mean that agentivity is the determining factor for this distinction, cf. Alexiadou, et al., 2004, p. 12.
[62] In Alexiadou, et al., 2004 many proposed tests are shown to be either wrong or inconclusive.
[63] Siewierska, 1984, p. 255

This indicates either that the passive label is used too broadly incorporating so diverging constructions that the term is irrelevant, or that it could be better captured by a prototype definition. The latter is more or less Siewierska's implicit suggestion. To summarize fairly widely agreed upon characteristics of the passive, I relay an adaptation of the list given by Werner Abraham:[64]

1. Passives are agent-defocusing. This results in (Direct) Object-orientation, and possible valency-reduction.
2. Passivization entails predicative stativization. This gives rise to an affinity of passives with perfective-resultative perspectives on verbs.
3. Passivization entails subjectivization and/or topicalizaton of a non-Agent (Patient/Recipient, an original DO/IO).
4. Passivization presupposes the affectedness of the (new) subject.
5. Passivization may be sensitive to perfective aspect.
6. Passives never go without special morphological marking.
7. Passives are detransitivizers. Semantically, the affectedness of the Patient is retained, but the distinctness of the participants may be reduced, and if the Agent is not even expressed, this feature is absolute.

This means that *semantic* or *inner* passive, in the sense of an inherent quality of an event, without morphological marking, is not included here.[65] It is also important to distinguish between passives and impersonal constructions. The typical passive is conceived of as having an agent, and it can be expressed or suppressed, but an impersonal construction does not individuate an agent in the same way. This is a more restrictive inclusion of constructions than Siewierska applied, but I think that Abraham's seven points should prove a useful prototypical definition for investigating the Semitic systems.

2.4.5. Causativity

The causative is a grammatical term that is at times as vaguely defined and applied as *the passive*. It seems more intuitive than it is, and in Semitic grammar it is ubiquitous and mostly left underspecified theoretically and therefore uninstructive as a grammatical label. I will develop and employ a stricter notion of the causative here, and it will be nuanced by other related grammatical categories.

[64] Abraham, 2006, p. 2
[65] Retsö, 1989, pp. 28-29

Firstly, from the event types discussed in 2.2 we can expand causative counterparts. The chains of the elements in events presented in Table 4 are augmented by a cause element preceding the other elements, as demonstrated in Table 20:[66]

States							Cause	>	Result
Activities	Cause	>	Subject	>	Action				
Achievements			Cause	>	Action	>	Object	>	Result
Accomplishments	Cause	>	Subject	>	Action	>	Object	>	Result

Table 20

From this we see that the causative entails a shift of focus to include a preceding element, and therefore the most important part of the event becomes its incipiency.[67] It also follows that the event is due to some Instigation. In contrast to this the related label *factitive* has gained some currency in Semitic grammar since Albrecht Goetze's seminal article "The So-Called Intensive in the Semitic Languages, published seventy years ago. Many authors use it as a causative to stative/adjectival and syntactically intransitive verbs,[68] but I think we could expand it to include the resultative of syntactically transitive verbs, as well. These were the two main functions of the Hebrew D-Stem that the Swiss scholar Ernst Jenni found when he applied the insights from Assyriology on the Hebrew material.[69] He claims that this *binyan* is unified semantically by the factitive-resultative.[70] I believe this double-term is actually unified as well. It does not matter whether one causes a state or an activity that brings about a state, the important aspect of the factitive is the focus on a participant entering a state, i.e. the [+AFF] in the clause. It is therefore the counterpart to the causative, which focuses on the beginning of an event. The factitive introduces a cause and focuses the event on the Affectedness. Table 20 is therefore the valid decomposition for both the causative and the factitive. To exemplify this, we can look at some simple clauses, an achievement, an activity, and a state:

1. a. Zayd left.
   b. ᶜAmr made Zayd leave.
2. a. Zayd was running.
   b. The angry dog made Zayd run.
3. a. The surface is smooth.
   b. Zayd smoothened the surface.

[66] Adapted from Tsarfaty, 2005, pp. 246-247.
[67] I think it is unproductive to separate the causing completely from the event, presenting causation as a double event. The causing is abstract and cannot govern full spatiotemporal properties separate from the caused event. It is therefore best captured as an addition to the complex inner makeup of an event, cf. Dixon, 2000, p. 30.
[68] For instance Huehnergard, 2005, p. 256.
[69] Jenni, 1968
[70] Jenni, 1968, p. 275.

In 1.b. ʿAmr is introduced as the cause. A *causative* reading would mean focusing on his instigating the event of Zayd's leaving, while a *factitive* reading would mean focusing on Zayd ending up in a new state (*having left*) as a result of ʿAmr's involvement in the event. The nuance is not relevant for English, so the causative and factitive clauses are the same. In 2.a. and b. the situation is the same, but in 3.b. the causative and factitive would be indistinguishable in any language because the ingressive is the point where Instigation directly leads to Affectedness. All these event types can be summed up if we neutralize Volition and Instigation for the causee: Causer [±VOL,**+INST**, ±AFF] and Causee [±VOL, ±INST, **+AFF**]. The causative entails a stronger focus on the former, the factitive on the latter.

As we have seen, the fine nuances that distinguish the causative from the factitive are not easily captured in European languages. I suspect, however, that a thorough investigation of how negation and TAM-markers work on the factitive and causative might clarify some differences. A negative factitive would presumably negate the whole predication, while a negative causative could be a frustrative which shifts the causee to [-AFF] without changing the Instigation parameter of the A.

An extension of the factitive is the *delocutive* or *declarative-estimative*. This function makes the causee enter a new state either by declaring it to be so, e.g. *I thee wed* or *I hereby declare…*, or by subjectively assessing that it enters the new state, e.g. *to glorify [assess as great]*. I think the factitive focus on the [+AFF] of the causee may also be the source of the *intensive* and *pluralic* functions that will be discussed. More affectedness could be interpreted as both, intensive as more thoroughly or forcefully affected, and pluralic as a spread of this increased affectedness on several objects. The increased effectiveness of an intensive or pluralic may also be the expansion of the notion "channeling extra force from outside the situation" that basically is the causative/factitive.[71] The *permissive* is the least instigating causative in that it simply does not hinder the event. It is not a factitive, however, as it focuses only on Instigation, and not on Affectedness. We may predict, therefore, that if a language distinguishes factitives and causative, the *permissive* will pattern with the latter. Finally, a related function is the *curative* which is a form of indirect causation where one asks someone to perform an action.[72]

In some cases the properties of the introduced cause may be relevant for the formation of causatives and factitives. Masayoshi Shibatani and Prashant Pardeshi have developed a continuum of causation denoting the involvement of the cause(r) in the event, which I will use to determine variation within causative formations. The stages of the semantic continuum are described as DIRECT

[71] Kulikov, 2001, p. 894
[72] Ibid., p. 892

> SOCIATIVE > INDIRECT.[73] Direct causation is concrete manipulation, while indirect causation can be for instance a command. The sociative covers the span between where the cause(r) participates in the caused event or uses an instrument.[74]

On a final note, I should mention that periphrastic and lexical causatives, e.g. *to make someone red < to be red* or *kill < die*, are not investigated here, as it is the morphological form that is the departure point, not the function.

2.4.6. Reflexivity and reciprocity

The notions of reflexivity and reciprocity are related in that they are situations where the initiator and endpoint of an action are the same. In the case of reflexives the action is directed towards the one who instigates it. As for reciprocals, the subject is plural and the action mutual, so that each subpart of the subject performs the action on the other and subsumes the same action back from it. The distinction of participants is very low.[75] There seems to be variation within the category reflexive as well, as the subject of a reflexive verb not necessarily assumes the participant roles agent and patient, but may instead be agent and beneficiary. There is also a related variation in alienability of the patient/beneficiary aspect of the subject. There is a difference between *washing oneself, one's hair, and dressing oneself.*

A related grammatical label is the middle. This stems from Greek grammar, and denotes the diathetic nuance of *doing something for oneself*. The term is often used, but vaguely defined. I will apply it as closely related to the reflexive, denoting something done *to or for oneself.*

2.4.7. Number

Number is seldom discussed as a category in the verbal system, but Abdelkader Fassi Fehri proposes that it is exactly this category that can explain the D-, L-, and C-Stems of Arabic, and we may assume much of the same would hold throughout the Semitic languages. I will present his proposal here more in the form of an excursus, as it is an interesting theory to sharpen other explanations against.

Fassi Fehri proposes a *Number Theory* to explain the Arabic D-Stem, and by extension the L- and C-Stems. These are the main hypotheses of Number Theory:[76]

1. *Number (Nb,* with *Pl* value*)* is the source of complexity.
2. *Nb* is a property of *Head/event* or *Specifier/Argument* (or both, hence 'distributed plurality', with potential multiple Specifiers)
3. *Nb* when applied to *Head* or *Specifier* can be realized as single or multiple *Heads* or *Specifiers*, depending on whether it is collective or distributive.

[73] Shibatani & Pardeshi, 2002, pp. 96-97
[74] Ibid., p. 118
[75] Lichtenberk, 1999, pp. 318-319
[76] Fassi Fehri, 2003, pp. 154-155

4. Various cases of complexity are instances of various *Nb* configurations
5. Voice may affect complexity, but is not the crucial factor in determining it.

By means of the standard phrase tree in Transformational Grammar we can illustrate his approach:

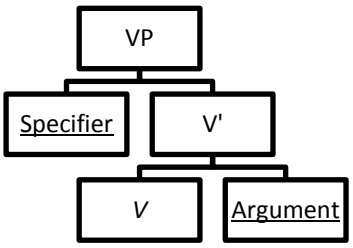

Figure 1

If we merge either Specifier or Argument (marked as underlined) with the function Nb (which is not a parameter of Sg/Du/Pl, but a function that pluralizes) we get patterns corresponding to intensive/extensive of number and distribution, that is to say several subjects or objects. If we merge the Head (V, marked in italics) with the function Plural Number we get intensive/extensive of force, time, and frequency instead. Fassi Fehri names these two processes Distributed and Non-distributed Number respectively.[77] It follows that the partial reduplication in the D-Stem, i.e. the double middle radical, would be an iconic manifestation of this plurality.

An intransitive D-Stem appears as an unergative, and we could therefore perhaps posit that the iterativity it expresses results from plurality of an internal object, which can indeed be expressed in a *figura etymologica*. The ability to take a cognate object has been suggested as a test for distinguishing unergatives from unaccusatives, but Susumo Kuno and Ken-ichi Takami have shown that the so-called Unergative Restriction on the cognate object construction is invalid.[78]

This approach accounts for the intensive/extensive reading of the D-Stem in terms of verbal plurality, but how is this related to the transitivizing function of the D-Stem? Fassi Fehri's solution is to treat the plurality of Specifiers that may arise with a D-Stem as ambiguous. On the other hand, a plural Specifier can mean causation/factitive, and this is the effect that the D-Stem seems to have when no intensity is involved. Both transitives and extended transitives may be formed this way, having the option of taking one or two objects respectively.[79] When we examine the D-, L-, and C-Stems morphologically we see a diagonal movement, as shown in Table 21:

[77] Fassi Fehri, 2003, p. 155
[78] Kuno & Takami, 2004, p. 134
[79] CA/MSA being a decthicaetiative or secundative language raises the indirect object to a core position marking it as accusative.

Suffix conjugation							Prefix conjugation				
	R_1	a	R_2R_2	a	R_3		R_1	a	R_2R_2	i	R_3
	R_1	ā	R_2	a	R_3	yu	R_1	ā	R_2	i	R_3
ʾa	R_1		R_2	a	R_3		R_1		R_2	i	R_3

Table 21

If we assume that there is an extra morphological element (X) in this set of forms, compared with the G-Stem, we see that it joins the R_2 in the D-Stem, assuming its identity producing a double consonant. It appears adjacent to the vowel between R_1 and R_2 in the L-Stem, assuming its identity producing a double/long vowel. And, finally, it moves out of the core skeletal structure in the C-Stem to establish a new position before R_1. The question is how this position is populated. If we assume that it is the /ā/ of the L-Stem we must explain why not only the extra X has moved, but also the vowel adjoining it, and why it then appears as short in its new position. We could expect /ʾaqatal/, only moving the extra element, and this might well have been syncopated to /ʾaqtal/. A third possibility is that there is no vowel between R_1 and R_2 to begin with.[80] In that case the basic structure of these three forms would be like this, before the final level of vowelling is added to produce pronounceable surface forms:

Suffix conjugation							Prefix conjugation					
	R_1		R_2X	a	R_3			R_1		R_2X	i	R_3
	R_1	X	R_2	a	R_3	yu		R_1	X	R_2	i	R_3
X	R_1		R_2	a	R_3		X	R_1		R_2	i	R_3

Table 22

I take the /a/ and /i/ between R_2 and R_3 to be manifestations of the basic vowel class of the D-Stem, i.e. the same as for G-Stem a-i-Class. This seems justified if we assume that this is the first vowel class in the Ablaut string: Ø > i > a > u, cf. 4.1.2.

The moved element (X) now causes a split in the Specifier allowing to agents, but not as separate Heads. This explains the participation or second human participant in many L-Stem verbs. Further, the movement of the X out of the core splits the Specifier completely licensing two Heads, and thus introducing a new agent participant with separate Volition from the causee. There are certain similarities between L- and C-Stems on the one hand, and nominal plurality on the other, and although I will not fully adopt Fassi Fehri's ideas in my analysis, I believe it is an important differing opinion from other approaches to these *binyanim*.

2.5. Towards a theory of the *binyanim*

I am now ready to describe how I envisage the *binyan* system: It is a system of templates from which a root must chose in order to produce a verbal form. Each template has a function, and it can be

[80] There is support for this in examining the G-Stem and how the first /a/ (after R_1) in the suffix conjugation is assigned, and how it is derived into passive /u/ as described in Guerssel & Lowenstamm, 1996.

accessed at all linguistic levels. This means that a root can take a *binyan* directly as a *situation* is made linguistic, as it maps on participants according to its typological strategy, or it can alter this initial configuration as the *binyanim* can be means of derivation at the syntactic level. This approach eliminates the need to posit gaps in the system, and can account equally well for verbs being the only instance of their root as for roots appearing in an array of templates. In relation to the mental and linguistic levels described above, Table 23 allocates the position and availability of the *binyanim* system:

Level	
extra-linguistic mental construct	
non-language specific linguistic entity	*binyanim*
typological strategy	
language-specific construction	

Table 23

This means that a root can take on a template and become a verb directly, or it can use the *binyanim* as a mechanism to alter the relation between the participants, or the focus or viewpoint on the eventuality. To exemplify this we can look at the N-Stem in BH: If we take the N-Stem to **focus on the "state of having achieved the goal"**, that is it will always take the most affected participant as its syntactically most prominent complement, and we can see the recourse to the *binyan* at various levels:

- The root √rdm takes the N-Stem straight away, and this is possible because the function of the N-Stem goes perfectly with a simple expression of the meaning or √rdm: "to sleep". The simplest clause would have only one argument (S), and it would be the participant affected by the eventuality.
- The root √qbr appears in the G-Stem meaning "to bury". When one wants to shift focus to the affected participant the root is cast in the N-Stem. This is not the only *binyan* which promotes the affected participant, but it is the only one that does not imply anything else.

This means that I regard the *binyan* system as a mental recourse in word formation, that could be graphically illustrated by a sectioned circle as in Figure 2:

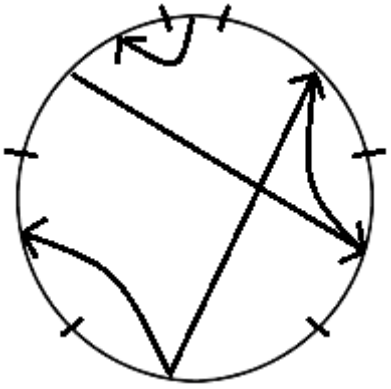

Figure 2

Each section is a *binyan* (the circle is a simplification, and a system would include more sections and more inner derivational arrows), and its function determines how wide a range of predicates it might accommodate. A situation revolves around the circle to find the section in which it best fits, and once the first word is formed this can in turn be altered by the inner mechanisms of the system (represented by the arrows) such as passivization, causativization etc. A word may also just enter the system and not derive further. This means that in principle any *binyan* can be basic, but the widest section of the circle for all the languages seems to be the G-Stem. Whether it has a function at all or simply denotes lack of other features remains to be seen.

What is not illustrated by the figure is the overlapping of some of the sections. As some *binyanim* may be defined by not completely corresponding, and therefore not distinguishing, properties, one would expect overlaps. The system is therefore by no means transparent and predictable. We can only aspire to explain the *binyan* choices already made in the languages, and the properties of an eventuality is not information that can automatically let us predict the *binyan* it will assume.

3. Method

To further qualify these questions raised in 1.1 we should keep the following points in mind: It seems practical to assume that different morphological marking is a signal for something else, whether it be phonological restrictions, syntactical construction, semantic categories, or discourse-pragmatic functions, at least until proven otherwise. That is to say, arbitrariness, redundancy and ambiguity will only constitute the last resort, when all systematization fails. Further, *a priori* assumptions on derivation, direction of derivation and base form should be avoided as such relationships must be established and qualified in their own right. We should also not assume to know the basic make-up of the *binyan* system, that is to say whether for example *opposition pairs* or *extension of features* are

the fundamental structures of the system. This means that each *binyan* in each language must be the minimal unit and the point of departure for a thorough investigation of the systems.

It is important at this stage to underline that an approach where each *binyan* is first analyzed in apparent isolation would not exclude opposition pairs,[81] configurational sub-systems,[82] arrays of functional heads merged on basic predicates,[83] or other systemic functions, but I think the mere existence of verbs that are the only manifestation of their root, i.e. a root appearing in only a single *binyan*, would, however, justify beginning an investigation at the level of the individual *binyan*, as there exists no relationships for these forms, except to *potential* slots throughout the system. Another relevant observation is that for some roots the manifested verbs seem unrelated, e.g. Hebrew √ˀzn for which we find the D-Stem *ˀizzēn* "to balance" and the C-Stem *hɛˀĕzīn* "to listen", and whether we dig for the least common denominator or posit different origins for such verbs, exploring the individual *binyan* in the first round of investigation seems the cautious way to proceed. In this particular case we find that what now seems to be different manifestations of the same root √ˀzn historically goes back to √wzn and √ˀḏn respectively.

The relationships between the *binyanim* are rather the object of a second level investigation where oppositions or overlaps/competition may be explored. That being said, if we adhere to any extent to a structuralist view of language, in the general Saussurean sense,[84] there is no practical method for separating these two levels completely. If meaning is created in relation to other signs in the system there is nothing to investigate in isolation. So to summarize this, the point being made here is not that the relationships between *binyanim* are irrelevant or non-illuminating, but that the single *binyan* must be the minimal unit and the starting point of an investigation into its functions. I will by implication of the features discussed relate the *binyanim* to each other in order to gradually accumulate a theory of the system as such. There are several pitfalls in isolating the *binyanim* extensively. Bruce K. Waltke and Michael P. O'Connor criticize earlier approaches to the system for:[85]

1. Assuming that the system is formally based on the Qal, or G-Stem.
2. Assigning a meaning to each stem, as if they were neatly organized morphological correspondences to semantic properties.
3. Disregarding the systemic character of the system.

When analyzing each *binyan* in each language under consideration I shall partly make myself guilty of all three misdeeds pointed out by Waltke and O'Connor. Firstly, I will give G-Stem correspondences

[81] Edzard, 1965
[82] Junger, 1987
[83] Doron, 1999, and Doron, 2003.
[84] Crystal, 2008, p. 457
[85] Waltke & O'Connor, 1990, pp. 352-353

for many of the non-G-Stem verbs under discussion, but this is only to provide some point of reference, in this case a different predicate with the same root. Sometimes a different *binyan* will be given as reference, and nouns and phrases may also appear. There is no automatic judgment in this, stating that the reference point is the source of derivation. It is only an illustrative example pointing out what surrounds the verb under discussion. Secondly, I will in essence try to establish some core properties of each *binyan*, as I think the various functions of each form are extensions and a progressive spreading or reinterpretation of some nucleus. I cannot, however, completely exclude that some *binyan* has taken on so different functions that no link can be found between them, and that the only load carried by the morphology is to mark a systemic opposition to other *binyanim*, and not indicate some inherent semantics of its own. Thirdly, in initially considering one *binyan* at a time I will no doubt miss much of the systemic character of the system. I hope, however, to point out a few relationships as an indispensible step in explaining each *binyan*.

So the method applied here is to gather the functions each *binyan* in each language (Akkadian, Gəʿəz, Amharic, Arabic, Cairene Arabic, Hebrew, Aramaic, and Phoenician-Punic) is reported to convey in the literature, and then examine how these relate to the parameters of prototypical transitivity as well as the other categories described in section 2, above. I will try to establish a common basic function of the *binyan* that accommodate the other semantic and syntactic functions. The treatment of each *binyan* will be concluded with a summary/conclusion in bold face. In the conclusion, section 5, I will sum up my findings and point out correspondences across the languages. Some points of the analysis are bound to be practically the same for more than one language. I will therefore sometimes refer back to the analysis of another languages instead of repeating a lengthy argument. The thoroughness of the investigation varies between the languages. This is due to the nature of the material that has been available to me during the investigation, and to my varying competence in these languages.

4. Analysis

4.1. Components of the diathesis system

4.1.1. Affixes

We are here concerned with the consonantal affixes involved in the formation of the *binyanim*. These are /n/, /t/, and /s/š/ʾ/h/y/. The consonant /n/ appears in many functions throughout the Semitic languages, and determining whether certain instances are indeed related should be done with caution. Initially, it must be noted that *binyanim* formed through /n/-affixes cannot reliably be posited for all the languages under investigation here. Jan Retsö suggests that the /n/ might be

related to the Hausa dummy subject particle /an/.[86] We should perhaps also keep in mind that the Amharic copulae (as well as those of other Ethio-Semitic languages) are built on a stem /n-/, and that Lipiński claims that the demonstrative element /(ə)nt/, which forms the basis of many forms of personal pronouns, e.g. Arabic /ʾanta/ "you (sg.m.)" and Hebrew /ʾatt/ "you (sg.f.)", goes back to such an /n/ expanded by a /t/.[87] A related form could have provided the material for the N-stem prefix and the parallels to, for instance, English are striking when considering the Ethio-Semitic copulae /n-/: *He is/was/has been killed.* where a form of the copula verb *to be* joined with a participle expresses the resultative/passive voice, i.e. the S entering its new state.

A theory that incorporates all three elements under discussion here is that of Stephen J. Lieberman. He claims that one could reconstruct an Afro-Asiatic, and Semitic, tripartite demonstrative system. The functions he ascribes the particles are shown in Table 24:[88]

š/h	the one visible to the speaker or in his linguistic focus
n	the one not visible to the speaker and not in his linguistic focus
t	the aforementioned

Table 24

Lieberman sees this system as the building blocks for causative, passive, and reflexive morphology, respectively. A different approach is taken by Werner Diem, who states that the /t/ may go back to direct or indirect object marker, while the /n/ may only go back to a direct object marker.[89] This is a syntactic approach, rather than the semantic considerations made by Lieberman. They do, however, not exclude each other, as the functions described in Table 24 might be carried out by the markers described by Diem.

The /š/h/ would also be the basis for the pronominal suffixes, and it has been noted that the causative prefix and the 3Sgm pronominal suffix are similar in some of the Semitic languages. Arabic and Phoenician-Punic are exceptions to this tendency. The causative prefix[90] takes both sibilant, laryngeal, and glottal form, and efforts have been made to show that all these prefixes are related. The sibilants could easily become an /h/ which could give rise to at least the /ʾ/. The problem is just that the historical material does not align itself with a neat step-by-step development of this morpheme. I think we should at least keep the /s/š/ group apart from the other consonant prefixes, as causative sibilants appear throughout the Semitic languages, although not necessarily in productive and easily recognizable *binyanim*. As for the /ʾ/h/ pair, we should look closer at where

[86] Retsö, 1989, p. 154
[87] Lipiński, 1994, p. 307
[88] Lieberman, 1986, p. 619
[89] Diem, 1982, p. 53
[90] We should cautiously remember that the *binyan* we are now discussing the morphological material of is not only used for the causative, as demonstrated in Retsö, 1989, p. 51, and Zaborski, 2007.

they appear. In Arabic and Hebrew the /ʾ/h/ appears only in the suffix conjugation, which, we must remember, has been shown to be diachronically younger than the prefix conjugation.[91] These are not the only environments where these two languages insert a consonant before an initial vowel. There is an epenthetic /ʾ/ in many Arabic word constructions, and the /h/ in Hebrew also appear in the N-Stem imperative *hiqqā̆tēl*. It seems that a prefixed vowel is just as much a trait of this *binyan* as a prefixed consonant. This holds in the prefix conjugation as well where they show *yuqtal* and *yaqtīl*.[92] It seems most likely that there are three separate strains of causative affixes contributing to the *binyanic* formations, a sibilant strain, a laryngeal strain, and a glottal strain. These may be of varying age, and must in any case have been so close as to push and drag each other in and out of the systems in the various languages.[93]

4.1.2. Apophony and apothematism

These two terms are variations on the morphological mechanism of Ablaut. Apophony denotes the process familiar from Indo-European languages where such processes in the past are exploited morphologically, while apothematism denotes the same vowel alternations without the historical background.[94] In this thesis the relevant phenomenon is apothematism, and I think the Ablaut chain uncovered by Mohand Guerssel and Jean Lowenstamm is quite instructive in relation to the Semitic material. They were working on the Arabic G-Stem, and found the following Ablaut pattern: Ø > i > a > u.[95] This chain seems to capture most of the apothematic alternations in the Semitic *binyan* system if one adjusts it to accommodate the other vowel qualities that appear.

4.2. The *binyan* system of the Semitic languages

Here follows the analysis of the diatheses in each language that I investigate. I first present an overview of the morphological categories in each language, and then proceed to discussing each *binyan*.

4.2.1. Akkadian

4.2.1.1. The morphology of the Akkadian System[96]

In discussing Akkadian I am mainly concerned with Old Babylonian, although most material presented is relevant for all dialects and historical stages of Akkadian. Other dialects will be

[91] Retsö, 1989, p. 29
[92] The diachronical relationship between suffix and prefix conjugation forms is not analyzed in this thesis. For a thorough investigation of some of these elements see Retsö, 1989, passim.
[93] Retsö, 1989, pp. 80-86
[94] A distinction made by Frithiof Rundgren as explained in Retsö, 1989, pp. 4-5.
[95] Guerssel & Lowenstamm, 1996, p. 12
[96] I use the following terminology for the categories of the verbal conjugation, following Huehnergard, 2005: Durative (iparras), Perfect (iptaras), Preterite (iprus), and for convenience the infinitive (parāsum) is used when citing examples of the *binyanim*, but the durative and preterite are used to illustrate the vowel classes in the G-Stem.

specifically mentioned only when interesting differences can be pointed out. The Akkadian *binyan* system is made up of four stems that can in turn be augmented by a t- or tan-infix:[97]

G-Stem[98]	32%	Gt-Stem	4%	Gtn-Stem	8%
N-Stem	10%	Nt-Stem	-	Ntn-Stem	2%
D-Stem	23%	Dt-Stem	6%	Dtn-Stem	2%
Š-Stem	9%	Št-Stem	1%/2%	Štn-Stem	1%

Table 25

This fairly symmetrical structure is adjusted by a few, and mostly very rare, *binyanim*:

ŠD-Stem
R-Stem (reduplicated R_3)
Red-Stems (reduplicated R_2 syllable)

Table 26

As far as derivation is concerned, I think we could safely categorize the t-Stems as derivates, but whether the tn-Stems should be seen as further derivations or separate derivations from the non-infixed stems is unclear. Neither morphological nor semantic reasoning determine this question.

4.2.1.2. The Akkadian G-Stem

For most languages discussed in this thesis there exists a G-Stem, and, regrettably, little can be said about it. It seems to express all kinds of verbal notions, with any degree of transitivity, and all valency patterns. This is also true for Akkadian, but I will in any case discuss the aspects of this stem that may set it apart from the other categories in the system so as to be able to contrast it with them later on.

The G-Stem is most often the only stem to show vowel classes, but in the case of Akkadian this is not a precise assessment of the material. We find vowel class distinction also in the N-Stem, but they are inherited from equiradical[99] G-Stems, and the systematic oppositions are in any case reduced as the preterite vowel is leveled to /i/ in all classes. The syntactic or semantic correlations to the vowel classes have been thoroughly discussed, and approximate categorizations have been made. It seems that N.J.C. Kouwenberg has adopted the most sober approach that does not produce counterfactual predictions or unfounded generalizations. He suggests that verbs gradually shifted

[97] A percentage indicating relative frequency is included here. The data is drawn from Kouwenberg's count of stems in the AHw and is only an approximation. The two values given for the Št-Stem indicates $Št_1$ and $Št_2$ respectively, and the Nt-Stem is found in only six instances and therefore makes up less than 1%, cf. Kouwenberg, 2010, p. 246.

[98] Concerning the denominations of the stems it should be noted that the labels most commonly used in studies on Akkadian are also applied here. This means that the G- and D-Stems are the traditional German labels, while N- and Š-, as well as all t- and tn- are the actual prefixes and infixes involved in the derivations. The ŠD-Stem is a mix of the two, while R- and Red- are purely conventional English labels. This diverges from the labels applied to the other languages in that the C-Stem is called a Š-Stem.

[99] I.e. having the same root. A similar term is used by Reut Tsarfaty: "equi-root counterpart" Tsarfaty, 2004, p. 111.

between essentially random lexical vowel classes, and groups of verbs in one vowel class attracted semantically similar verbs so that isomorphism gradually increased. This does not mean that all verbs in a vowel class share features, only that certain semantic features tend to appear in the same class. These are the vowel classes of the Arabic G-Stem:

Vowel class[100]	**Example (durative – preterite)**		**Relative size**[101]
a	iṣabbat – iṣbat	"to take"	6%
i	irrik – īrik (√ʾrk)	"to be(come) long"	45%
u	imaqqut – imqut	"to fall"	20%
a-u	iparras – iprus	"to divide"	28%
a-i	urrad – urid (√wrd)	"to descend"	1%

Table 27

Kouwenberg associates certain traits with the vowel classes. The a-Class may in some cases be a phonological result of gutturals[102] as R_2 or R_3 influencing the vowel in accordance with the [+back] feature of the guttural. Certain middle verbs also appear in this class, and Kouwenberg draws a parallel between this function of the a-Class and the i-a-Class in West Semitic, e.g. Arabic *labisa-yalbasu* "to dress". I understand his use of the term middle in this instance as *action somehow directed towards the agent*,[103] and these are therefore relatively low on the transitivity scale.[104] A particular group of verbs in the a-Class are highly transitive verbs that take *paras* as their imperative pattern instead of the standard *piras*, e.g. *ṣabat* "seize!", but *limad* "learn!". This seems to be a mark of reduced transitivity, as for instanc *learning* is middle, while *seizing* is highly transitive. Verbs may also shift from one vowel class to another. A general shift from a-Class to i-Class affects many verbs throughout the history of Akkadian.

The i-Class accommodates all kinds of verbal notions, but Kouwenberg identifies two subgroups amongst them. These two are made up of in many regards opposing types of verbs. Firstly, there are many high transitivity punctual verbs, and secondly, there is a group of adjectival verbs. The latter are very low in transitivity as they are stative. They share *homogeneity* in that both are characterized by the *subinterval property*, cf. 2.2. This is not always evident at clause level because any element, even, and especially, verbal conjugation, interacts with the basic *Aktionsart* and event properties of the verb and may alter it.

[100] Three classes use the same vowel throughout the conjugations. Two classes use two different vowels, of which the first is used in durative and perfect and the second in the preterite and imperative. The former three classes have been called *isovocalic* and the latter two *anisovocalic*, cf. Kouwenberg, 2010, p. 68, Kienast, 2001, p. 238. The terms are classical hybrids and should perhaps be substituted by the ironically equivocal *equivocal* and *inequivocal*.

[101] This is a percentage based on numbers given in Kouwenberg, 2010, pp. 71-75 and include only those types of verbs that show vowel classes.

[102] This is used as a cover term for laryngeals, pharyngeals, and glottal.

[103] Kouwenberg, 2010, p. 74

[104] Ibid., p. 69

Two groups that stand out in the u-Class are atelic activity verbs, and here Kouwenberg includes verbs of emittance, and non-directional motion verbs. These are mostly univalent, and even when bivalent the clauses are of low transitivity. This class is predominantly unaccusative. In relation to Table 17 above I could mention that two verbs for "vomiting" appear in this class: *ʾarûm* and *parûm*.[105] Some telic motion verbs are also found in the u-Class, supporting the associative and non-exclusive theory that Kouwenberg used to describe the vowel classes. Phonological development has also led to an accumulation of III-weak verbs in this class as they probably have shifted from the a-u-Class: √ksw *yikassaw* > *yiksû*.

As for the a-u-Class, Kouwenberg claims that it does not mark neither degree of transitivity nor *Aktionsart*. They are, however, almost exclusively syntactically transitive. The semantic transitivity parameters tend to align with each other, and I think we can see a tendency towards less affected objects with the verbs Kouwenberg identifies as durative within this class, and this coexists with the punctuality parameter that is strongest with high Affectedness, and weaker with these duratives. *Akālum* "to eat" is found in this class, and as we have seen, it is an affected agent verb, and *naṭālum* "to see" takes an experiencer as its most prominent syntactical participant. Further, a verb such as *šaṭārum* "to write" is effective and therefore not affecting an object at all.[106] All this shows that the a-u-Class is rather varied as well. Wolfram von Soden limits the description of this class to associating with it "[d]ie Mehrzahl der eine Tätigkeit am Objekt schildernden Verben […]".[107]

Finally, the a-i-Class is only used to accommodate weak verbs, and because there are purely morpho-phonological reasons for this no semantic association could or should be sought for this class.

I will dwell for a moment on the explanation given by Kouwenberg for the semantic groups of verbs within the vowel classes. His theory is that an associative and accumulative process has given rise to certain semantic affiliations, but this view gives ample room for the mutually exclusive semantic make-ups within a vowel class, and for the idiosyncrasies that we come across. A diametrically opposite approach to Kouwenberg's is presented by Giorgio Buccellati. He claims that the vowel classes originally marked a tripartite syntactic categorization (transitive, reflexive, intransitive) and a dipartite *Aktionsart* categorization (action (fientive), condition (stative)) in the following manner:[108]

[105] Kouwenberg, 2010, pp. 73, 84
[106] Ibid., p. 72
[107] von Soden, 1995, p. 140
[108] Buccellati, 1996, p. 96

	transitive	reflexive	intransitive
Verb of action (fientive)	a-u	a	u
Verb of condition (stative)	-	-	i

Table 28

This is a far cry from the observable situation in the Akkadian available to us, but Buccellati claims that "[v]ery little is left, however, of this system in historical times".[109] It seems methodologically unsound to posit a perfectly structured and isomorphic system just before observable data arise. This is related to the problems of linguistic reconstruction and proto-languages in general. If the historic languages show all kinds of variation, idiosyncrasies and exceptions to presumed rules, why should we expect all pre-historic linguistic activity to be mathematically rigid and permeated by isomorphism? There is also the related, and equally gratuitous, idea of a vowel in itself, and throughout the grammar of a language, representing a basic concept. Such a claim disregards the principle of double articulation that is an essential property of human language, and we find rebuttals of two variants of this idea, first by Jan Retsö, who in a paralipsis dismisses the view that /u/ and /a/ are related to the idea of *suffering* and are therefore used to form Ablaut passives,[110] and secondly by Jerzy Kuryłowicz, who for all intents and purposes dismisses the search for meanings associated with the vowel classes all together:

> *To look for a constant association between the vocalism of R_2 and the fundamental meaning of non-motivated (primary) [i.e. G-Stem] verbs is a methodological derailment tantamount to the old theory of "Lautsymbolik".*[111]

A we have seen, the vowel classes in the Akkadian G-Stem sometimes shift, and verbs may appear in different classes in different dialects. We find for instance *kašārum* as a-u-Class in Sargonic Akkadian and Old Babylonian, but it later appears in the i-Class.[112] In this case the shift seems to be a corollary of the e-colouring that affected verbs with /r/ in this position,[113] but there are also examples of, as far as we know, unmotivated shifts, e.g. *palāqum* mostly i-Class, but appears as a-u-Class in Standard Babylonian. An intersecting phenomenon is verbs appearing in different vowel class in diverging dialects, e.g. *balāṭum* u-Class in Babylonian and a-Class in Assyrian.

4.2.1.3. The Akkadian N-Stem

The Akkadian N-Stem is marked by a prefixed /n-/ that is assimilated in all forms involving other prefixes. The basic vowelling of this stem coincides with the G-Stem, and the vowel classes follow the

[109] Buccellati, 1996, p. 96
[110] Retsö, 1989, p. 23
[111] Kuryłowicz, 1973, p. 43
[112] Hasselbach, 2005, p. 194
[113] Kouwenberg, 2010, pp. 79-80

root as far as the durative-perfect vowel is concerned. The preterite vowel, however, is /i/ for all verbs. The functions reported for this stem are summarized in Table 29:[114]

Passive	naṣbutum	to be taken	ṣabātum	to take
Anticausative	naptûm	to open by itself	petûm	to open sth.
Reflexive	nasḫurum	to turn (oneself)	saḫārum	to turn
Reciprocal	nanmurum	to meet, see each other	amārum	to see
Ingressive	nabšûm	to come into existence	bašûm	to exist
Basic	naplusum	to see, look at	[palāsum (rare)	to see]
	naprušum	to fly	-	-

Table 29

We can see that the subject of these predicates is the affected entity of the situations described. The passive is the construction that focuses on the affected participant as opposed to the active construction where the most agent-like participant is cast as most prominent syntactic participant. We have also seen that the passive entails stativity in the sense that the result of the action is that O (of the underlying active clause) enters a new state.[115] This also holds for the anticausative. In both these constructions the focus is directed towards the affected participant on the expense of the agent or causer. The reflexive, on the other hand, employs an S that is a combination of A and O. It is the initiator and endpoint at the same time. This is a less frequent function of the Akkadian N-Stem, and this stem is not the main device used to express reflexive predicates. Nevertheless, the apparent affectedness-assignment of the N-Stem might be exploited to express the reflexive as the [+AFF] is just as salient a property of the S of reflexives as any configuration of Volition and Instigation. This can be extended to the reciprocal, and this function of the N-Stem, although rare in any case, is more frequent in Old Assyrian than Old Babylonian.[116] The ingressive, when in opposition to other *binyanim*, most often the G-Stem, contrasts with a stative verb. The argument of a state is completely affected, and the N-Stem serves as an ingressive because it focuses on the affected entity entering this state. It is at this point pertinent to relay Kouwenberg's assessment of "the essence of the N-stem". He claims that it is a device to make stative predicates fientive.[117] Stative in this case may be either an adjective or the predicative conjugation of the G-Stem[118] which with active and syntactically transitive verbs denotes the state of the O. This means that the N-Stem codifies the ergative aspect of the Akkadian verbal adjective. The grammars touch upon this relation as they describe the N-Stem's own predicative conjugation as redundant, and only employed when a morphological device is needed to convey a distinct meaning from the G-Stem stative, e.g. *nalputāku*

[114] These are drawn and adapted from Huehnergard, 2005, pp. 361-362, von Soden, 1995, pp. 146-147, and Kouwenberg, 2010, pp. 294-300.
[115] Cf. the discussion of passivity in 2.4.4.
[116] Kouwenberg, 2010, p. 294
[117] Ibid., p. 299
[118] This is Huehnergard's term for what appears in other grammars as the *stative* or *permansive*.

"I have been (oficially) registered" and *laptāku* "I have been recorded/inscribed". In the Standard Babylonian literary dialect this has also been utilized without apparent semantic differentiation as stylistic device, e.g. *nalbušāku* and *labšāku* "I am dressed".

The verbs classified as basic in the N-Stem are those that appear with its least derived semantic meaning in this stem and do not stand in opposition to the morphologically simpler G-Stem. This is not the strictest of definitions, as even N-Stem verbs with relatively rare G-Stems are included in this notion. Among these verbs we find a cluster of notions related to "moving away/fleeing", and we may also associate the verb *naprušum* "to fly (away)" with this cluster. The same is perhaps true for *nentûm* "to move along in parallel (of celestial objects)". We might also note that *naprušum* seems to be used quite frequently to denote "taking flight, taking to the wings" as an ingressive.[119] These verbs encode situations that are conceptualized as affecting the main participant, and this is why they have been directly cast in the N-Stem, and not ended up there due to derivation, cf. 2.2.

The positional predicates *itūlum* "to lie" and *izuzzum* "to stand" form a verb couple whose stem assignment has been a battle ground of the great Assyriologists. Their treatment at this juncture reveals my adherence to the view of Arno Poebel as reiterated by John Huehnergard.[120] The *itūlum* is to be read as a Gt-Stem of *niālum*, a basic N-Stem of ingression meaning "to lie down". The Gt, as expected, often appears as a reciprocal "to lie with". The *izuzzum* is a fossilized N-Stem of the II-weak √zVz. Huehnergard holds that a /w/ is the middle radical, while Kouwenberg opts for an /ā/.[121] In any case, the ingressive meaning "to stand up, rise" has become stative "to stand".

Finally, *naplusum* "to see, look at" is an idiosyncratic N-Stem verb that we might loosely relate to the functions of the N-Stem discussed by noting that it is an experiencer verb whose O is unaffected while the A is the affected entity. Both Volition and Instigation are less relevant properties of clauses with this verb, and experiencers have the same properties as recipients/addressees, as shown both by Lehmann's participant properties (cf. Table 7) and Næss' grouping of these roles under the common label volitional undergoers (cf. 2.4.2). I believe this point underlines the function of the N-Stem as promoting the most affected entity in that these participant roles that often appear as indirect objects and are associated with the dative case are relatively more affected by an action than an accusative direct object being merely moved/given/experienced etc.

To conclude, the Akkadian N-Stem forms verbs that take the most affected participant as their most prominent syntactic argument (S or A). This makes it available for passive, anticausative, and unaccusative verbal notions in particular, but also for reflexives and reciprocals.

[119] The Hebrew verb *nimlaṭ* "to fly", also in the N-Stem, is an interesting parallel to this verb.
A counterexample that cannot mean "to fly *away*" is cited in the CAD Vol. 11 p. 341: *ultu qereb elippēti… aribiš ip-par-šu-ma* "like locusts (my soldiers) swarmed from their ships (and defeated the enemy)".
[120] Huehnergard, 2002, p. 161ff
[121] Kouwenberg, 2010, p. 488

As it marks the affected entity's entering a new state it can form ingressive verbs from stative notions.

4.2.1.4. The Akkadian D-Stem

The Akkadian D-Stem is marked by a double R_2 and the vowel /u/ in the personal prefixes of the prefix conjugation. The functions reported for this *binyan* are listed in Table 30:[122]

Factitive	dummuqum	to improve	damāqum	to be(come) good
Causative	ḫulluqum	to destroy, cause to perish	ḫalāqum	to disappear, perish
Delocutive	šurruḫum	to glorify	šarāḫum	to be splendid
Resultative	zuʾʾuzum	to distribute	zâzum	to divide, get a share
Pluralic	puttûm	to open sth.	petûm	to open sth.
Denominative	ruggubum	to provide with an attic	rugbum	attic
Privative	uppulum	to delouse	uplum	louse
Intensive	ḫummuṣum	to rip off	ḫamāṣum	to take off
Basic	suppûm	to pray, beseech	-	-
= G-Stem	gumurrum	to finish	gamārum	to finish

Table 30

The first two functions are often not distinguished at all, but as we have seen they are different in that the causative focuses on the beginning of the event and on the participant marked as [+INST], while the factitive focuses on the end of the event and on the participant marked as [+AFF], cf. 2.4.5. I think the Akkadian D-Stem is primarily factitive, and so-called causatives in this *binyan* are better read as factitive. They are directed towards the new state of the affected entity. It follow, therefore, that I associate the factitive with the D-Stem and the causative with the Š-Stem.[123] The difference from the N-Stem is that with the factitive the affected entity, on which the focus lies, is not the syntactically most prominent participant, i.e. the agent is not suppressed.

From this function the leap is not far to the delocutive, and furthermore the resultative is basically a factitive of transitive verbs. The pluralic and intensive functions are extensions/modifications of the introduced cause in the factitive. They reinforce the Affectedness through marking a stronger exertion of force supplied by the external argument, either directed more forcefully towards a single participant, or spread among several, but they do not introduce a new participant. I think this reveals a weakness of Næss' theory. She claims that a plural object reduces transitivity because the Affectedness can more easily be construed as partial when the object is less individuated in this way.[124] When the extra force added to the event is the reason for this distribution, I think it is rather an instance of increased transitivity as more of the event is transferred, and the verb is not a less telic. It also seems that the A of D-Stem verbs is almost

[122] These are drawn and adapted from Huehnergard, 2005, pp. 256-258, von Soden, 1995, pp. 143-144, and Kouwenberg, 2010, pp. 271-279.
[123] Cf. Kouwenberg, 1997, p. 238.
[124] Næss, 2007, p. 135

exclusively [+VOL]. This is perhaps another effect or cause of an increased transitivity. The increased semantic transitivity often amounts to valency increase.

As for the denominative function it can be seen as introducing an agent in some relation to the noun, but that is only one side to it. There seems to be a common trait for the denominative verbs, including the privative, that the noun constitutes an affected entity, or in some cases effected, i.e. produced, as with *ruggubum* above. This therefore aligns perfectly with the factitive, and makes the D-Stem ideal for forming new denominative verbs. The verbs employing the D-Stem as their basic *binyan*, or verbs that are indistinguishable from equiradical G-Stems, have properties that already make them factitive or aligning them with another function of this stem, thus facilitating their entry into the system through exactly this category.

The Akkadian D-Stem is factitive introducing or underlining a cause and focusing on the Affectedness of the O. Other functions are extensions and nuances of the factitive.

4.2.1.5. The Akkadian Š-Stem

The Akkadian Š-Stem is marked by a prefixed /š/ and the vowel /u/ in the personal prefixes. These are the functions ascribed to this stem:[125]

Causative	šumqutum	to cause to fall	maqātum	to fall
	šušmum	to inform, cause so. to hear sth.	šemûm	to hear
Factitive	šumruṣum	to make sick, cause trouble	marāṣum	to be(come) sick
Permissive	šukšudum	to allow to reach	kašādum	to reach
Denominative	šumšûm	to do during the night	mūšum	night
Inchoative	šupšuqum	to get into difficulty	pušqum	difficulty
Basic	šutlumum šuklumum	to give, lend to complete	- -	- -
= D-Stem	šuknušum = kunnušusum	to subjugate	kanāšum	to bow down, submit

Table 31

The causative is the most common function of the Š-Stem. A new participant is introduced, and there is no Volition constraint on this *causer*. This leads us to look closer at the Instigation parameter, and its positive configuration with the new participant does indeed seem to be the core property of the Š-Stem. The causative (both syntactically transitive and bitransitive) are formed by adding such a [±VOL, +INST, ±AFF] participant which takes up the A position, and the *causee* becomes the O. The O of the non-causative may become a second O, but we should note that although such trivalent constructions are described in the grammar of all Semitic languages, they are not widely used. The second O is usually suppressed.

[125] These are drawn and adapted from Huehnergard, 2005, pp. 299-301, von Soden, 1995, pp. 145-146, and Kouwenberg, 2010, pp. 327-333.

The factitive is reported for the Š-Stem, but this is based on the formal approach to the factitive in which it is seen as simply the causative counterpart for adjectival or syntactically intransitive verbs. My understanding and usage of the term is different (cf. 2.4.5), and I take the so-called Š-Stem factitives to be causatives. If we look at the D- and Š-Stem of √mrṣ, we find that they partly overlap in meaning. I hold, however, that their paraphrases should be "to make someone be ill" and "to cause illness" respectively. The nuance is subtle, and not relevant in English, but the former focuses on Affectedness and the latter on Instigation. *Šumruṣum* may for instance mean "to infect", and I think this hints at the underlying mechanisms. An infection is an Instigation, but it might be frustrated. In the D-Stem, on the other hand, the illness, i.e. the Affectedness, is the predication itself. Beyond this the affinity of functions in the D- and Š-Stems is often exploited to derive different meanings, without substantially different functions. This decreases the transparency of the system and forms idiosyncrasies. This alternation is also employed as a literary device.[126] The permissive is a form of indirect causative, and the Š-Stem may take on this aspect. This does not exclude the more involved *causer*, and the example *šukšudum* can also be used for "to make so. reach". This is also an apparent contradiction of my statements on the [+INST] property above. The new participant in the permissive seems to be [+VOL, -INST]. It might be the case that with the permissive the value on the Instigation continuum is barely positive, thus still being opposed to a strictly [-INST], and Volition may well be irrelevant, but this remains speculation, and tantamount to procrustean methods. I will simply acknowledge that the permissive hardly or barely entails Instigation of the cause(r).

The denominative and inchoative are the same function, and they introduce a [+INST] participant to a nominal notion. This forms the "time of day" causatives that we find in Akkadian, and that have become the ingressive auxiliaries in Arabic, e.g. *ʾaṣbaḥa* "to become (in the morning)" and *ʾaḍḥā* "to become (in the forenoon)".

The basic verbs of this *binyan* are notions that are compatible with a causative reading in any case. This is a form of deponency, where these verbs appear in a seemingly derived stem as its properties align with the properties of the event described. There is no inherent incompatibility with the G-Stem, but, crucially, there is also compatibility with the Š-Stem. Finally, some grammars report the overlap with the D-Stem as amounting to synonymy in some cases. This has, however, already been accounted for.

An elative function of the verbal adjective of the Š-Stem is also reported.[127] It seems quite straightforward to posit it as the resulting state from the causative, e.g. *šurbûm* "magnificent" from *šurbûm* "to make great". I think we touch upon one of the intricate relationships between the *binyan* system and verbal conjugation in this instance. The verbal adjective, as a grammatical category, has

[126] Kouwenberg, 2010, pp. 328-329
[127] Ibid., pp. 331-332, and Huehnergard, 2005, p. 302.

properties of its own, and we need not therefore necessarily read it as "magnified" in this instance. The causative function may have been neutralized by the stative function of the verbal adjective, and we end up with simply "magnificent". To what extent these are really elatives, i.e. expressing a stronger instance of the adjective, is somewhat unclear. Their distribution is also limited. They mostly appear in literary texts.

As for phonological restrictions, the verbs with R_1=/w/ take Š-Stems when the meaning expressed could be accommodated in either the D- or Š-Stem.

To sum up the Akkadian Š-Stem, it is a causative stem in that it introduces a cause(r) and focuses on the Instigation of this cause(r). This draws attention to the incipiency of an event.

4.2.1.6. The Akkadian t-Stems

The Akkadian t-Stems are versions of the G-, D- and Š-Stems with an infixed /-t-/ after R_1. An Nt-Stem is sometimes reported, the AHw gives eight instances of it, but they can be explained by other means. We shall see that this is a logical consequence of the interpretation of the t-Stems presented here. Kouwenberg immediately characterizes the Gt-Stem as detransitivizing, and by this he means the same semantic transitivity that I have been discussing here.[128] I think we can safely expand that statement to include all the t-Stems. First, we examine the functions of the Gt-Stem:[129]

Reciprocal	mitḫuṣum	to fight, strike one another	maḫāṣum	to strike, kill
Separative	atlukum	to go away	alākum	to go, walk
Ingressive	atlukum	to start walking	alākum	to go, walk
Reflexive	šitūlum	to ponder	šâlum	to ask
Mediopassive	ḫitlupum	to be covered	ḫalāpum	to slip in, dress
Intensive	kitmurum	to pile up	kamārum	to pile, amass
Other	tizkurum/tisqurum	to speak	zakārum/saqārum	to speak

Table 32

We see detransitivizing through conflation of participants with the reciprocal and reflexive. The mediopassive shifts focus to the affected entity and obfuscates the agent, resembling the N-Stem in this regard. This also reduces transitivity. The other functions do not fit the same patterns. The separative and ingressive are perhaps nuances of the same notion, and here exemplified by the same verb, and the only interesting parallel that springs to mind is the group of basic N-Stem verbs discussed in 4.2.1.3 above. They include both separative and ingressive verbs of movement. The verbs of movement are inherently middle in that one could paraphrase *walk* as "move oneself at

[128] Kouwenberg, 2010, p. 360

[129] These are drawn and adapted from Huehnergard, 2005, p. 393, Streck, 2011, p. 65, Kouwenberg, 2010, pp. 360-361, and von Soden, 1995, p. 150.

foot". We should also keep the discussion of unergatives in mind (cf. 2.4.3), where the S can be seen as [+VOL, +INST, +AFF]. This is perhaps why some of them appear in the N-Stem, and in this case easily take on the marker for reduced transitivity, /-t-/. The semantic shadings they express are in any case minute, and to a certain extent the Gt-Stem might have been used simply as a device to diversify form for diverging meaning. This is also the only explanation that could resolve the apparent mystery of intensive Gt-Stem verbs. Michael P. Streck emphasize that these are literary forms, and that they are uncertain,[130] but it is perhaps more probable that they are lexicalized Gt-Stems that have developed into resultatives and therefore lost a clear opposition to the G-Stem, e.g. the verbal adjectives *litbuš* and *labiš* where the former has developed from "is dressed in" to "wears", and the semantic opposition is lost.[131] An interesting case are the Gt-Stems that do not conform with the described functions. They are not highly transitive, and that is perhaps their only common denominator. For the example above, *tizqurum* "to speak", the O is not highly individuated as it is made up of *words* or *a language*, and the A is perhaps the most affected entity, similar to the affected agent reading of ingestive verbs,[132] that is to say, the language is not affected in a significant way when one speaks it. **The Gt-Stem can therefore generally be said to either conflate the affected with the controlling entity, or focus on the effects on the former. These are detransitivizing functions.**

Next, we examine the Dt-Stem, most of which stand in opposition to the D-Stem:[133]

Passive	nutakkurum	to be changed	nukkurum	to change
Reflexive	šutarruḫum	to praise oneself, boast	šurruḫum	to glorify
Reciprocal	kutaṣṣurum	to assemble	kuṣṣurum	to gather
Basic	šutaʾʾum (√šʾy/w)	to show indifference	-	-

Table 33

We find the same detransitivizing functions, the passive, reflexive and reciprocal. There are also a few verbs appearing in the Dt-Stem as their basic form. Two of the four verbs in this category reported by Kouwenberg are either reflexive-factitive or simulative, viz. *šutaʾʾum* "to show indifference" and *putuqqum* "to be attentive". This makes for an interesting comparison with the morphologically parallel Arabic tD-Stem, discussed in 4.2.4.7 below. **The Dt-Stem carries out much of the same functions in relation to the D-Stem as the Gt-Stem does with the G-Stem, i.e. conflating the participants or shifting focus to the affected entity, reducing transitivity.**

The functions of the Št-Stems are summarized in Table 34:[134]

[130] Streck, 2011, p. 65
[131] Kouwenberg, 2010, p. 373
[132] Note also the similarity with the Arabic *takallama* "to speak" which appears in FV, a Dt-Stem.
[133] These are drawn and adapted from Huehnergard, 2005, p. 424, Streck, 2011, p. 66, Kouwenberg, 2010, pp. 383-386, and von Soden, 1995, p. 151.

Št[1]	**Passive of Š**	šutalputum	to be destroyed	šulputum	to destroy
Št[2]	**Causative of Gt**	šutaṣbutum	to assemble, cause to grasp one another	tiṣbutum	to grasp one another
	Reflexive of Š	šutamruṣum	to concern oneself	šumruṣum	to make sick
	Other	šutamṭûm	to be in short supply	-	-

Table 34

We see that these stems are also detransitivizing, being employed by the passive and reflexive. The causative function of the Št[2]-Stem is the counterpart of Gt-Stem verbs, so the reduced transitivity is the same. Again we have a category of "Other" verbs that appear in the Št[2]-Stems. They are not easily unified, and that is why this *binyan* has been called *lexical*. There are however a couple of semantic clusters within the stem, identified by Kouwenberg.[135] These are reciprocals or reflexives that require a certain exertion of force, i.e. *fighting*, *confronting*, or *making a serious effort* and *hurrying*. The force or effort supplied for the event resembles the focus on Instigation that characterizes causatives generally, cf. 2.4.5. This connection is perhaps the Š-Stem and its derivations themselves.

All in all, the Št-Stems perform the same relative functions as the other t-Stems, reducing transitivity. The transitivity increase implied in the causative conflicts with this function leading to more complex notions expressed in this *binyan* as the competing forces of the /š/ and the /t/ are resolved.

Finally, the Nt-Stem could be called an elusive element within the Akkadian *binyan* system. The very few claimed instances are ambiguous, and I think we might explain this by recourse to the definitions given for the t-Stems and the N-Stem of Akkadian so far. If the N-Stem focuses on the most affected entity the Nt-Stem could not contribute anything, because it would either also focus on that entity or conflate it with the controlling participant, thus undermining the /n/-component. An Akkadian Nt-Stem is therefore nonexistent as it would be self-contradictory or at best pleonastic.

4.2.1.7. The Akkadian tn-Stems

The Akkadian tn-Stems take a /tan/-infix which appears in its full form only in the durative, and their function is to derive pluractional predicates from the other *binyanim*. The pluractional function may appear as an iterative, frequentative, habitual, continuous, or distributive. This separates it from the pluralic function, which is specifically distributive. I give examples of all the tn-Stems in Table 35:[136]

[134] These are drawn and adapted from Huehnergard, 2005, pp. 434-435, Streck, 2011, p. 68, Kouwenberg, 2010, pp. 386-388, 404-411, and von Soden, 1995, pp. 152-153.
[135] Kouwenberg, 2010, pp. 409-411
[136] These are drawn and adapted from Huehnergard, 2005, pp. 411, 424-425, 436 and Kouwenberg, 2010, pp. 417-430. I give the durative form as examples of the tn-Stems as this is the only part of the conjugational system that clearly shows the infix.

Gtn	imtanaqqut	to fall again and again	maqātum	to fall
Ntn	ittanabriq	to flash, light up repeatedly	barāqum	to shine, flash
Dtn	uktanallam	to keep showing sth.	kullumum	to show
Štn	uštanaḫḫaz	to instruct, inform someone repeatedly	aḫāzum	to take notice, learn

Table 35

These stems reduce transitivity by forming less punctual predicates, but the pluractionality mostly repeats the whole action, and each of the subevents inherit the structure of the corresponding G-, N-, D-, or Š-Stem, so the tn-Stems do not really encode substantial transitivity variation.

4.2.1.8. Other Akkadian Stems

The literary dialect called Standard Babylonian shows a combination of the Š- and D-Stems, called the ŠD-Stem.[137] It is most often semantically closest to the D-Stem, and it is in any case only found with a limited number of roots. An example of this stem is *šupaṭṭurum* "to disperse", with the related *puṭṭurum* "to separate, dispel". I think this device has developed from the realization that D- and Š-Stems share the introduction of a cause(r), and the factitive and causative nuances they convey are often overlapping, so that a ŠD-Stem merely underlines both the [+INST] of the new participant, and the [+AFF] of the O, thus realizing a verb closer to prototypical transitivity.

There are also vestiges of an R-Stem forming stative or ingressive verbs. Some roots show only the verbal adjective from the paradigm of such verbs, e.g. *šalummum* "brilliantly radiant".[138]

4.2.2. Gəᶜəz

4.2.2.1. The morphology of the Gəᶜəz System[139]

Gəᶜəz shows a tripartite lexical class categorization of its basic stem. These stems correspond to G-, D-, and L-Stems in other Semitic languages both formally, to a large extent semantically, and on any account historically, but the fact that very few roots appear in more than one of these stems leads us to classify these derivations as lexical.[140] They are in that sense structurally more similar to the vowel classes of the G-Stems in the other languages. Further, the prefixes /ʾa-/ta-/ʾasta-/ may be added to any of the basic stems resulting in a twelvefold system, but really only a fourfold system for each root in the vast majority of cases:[141]

[137] Kouwenberg, 2010, pp. 334-337

[138] See the discussion of the Arabic R-Stem for comparative remarks on this formation in 4.2.4.10.

[139] I use the same labels as for Akkadian, i.e. G-, D-, t-Stems to describe Gəᶜəz. In addition the L-Stem is used for verbs with long /ā/ after R_1, the C-Stem (in this case with a /ʾa-/-prefix) is used although this is a label denoting function rather than form. The st-Stem denotes verbs with the prefix /ʾasta-/, avoiding Thomas Lambdins cumbersome CGt-, CDt-, and CLt-Stem labels.

[140] This classification and terminology follows Lambdin, 1978, p. 49.

[141] Adapted from Weninger, 2011, p. 1131.

		C-Stems (ʾ)	t-Stems	st -Stems
G-Stem	qatala	ʾaqtala	taqatla	ʾastaqtala
D-Stems	qattala	ʾaqattala	taqattala	ʾastaqattala
L-Stems	qātala	ʾaqātala	taqātala	ʾastaqātala

Table 36

4.2.2.2. The Gəᶜəz basic stems (G-, D-, and L-Stem)

The G-Stem is used for syntactically both intransitive and transitive verbs, but a vestige of the vowel class system, as it is still seen in other languages, may be found in the vowel following R_2. It is either /a/, or /ə/ or even missing altogether. The reduced or missing vowel is a marker of reduced transitivity, and we find stative, affected agent and reflexive notions among these verbs, e.g. *rəḥba* "to be wide", *satya* "to drink", *labsa* "to dress". The /ə/ corresponds to the /i/u/ in the suffix conjugation of the Arabic G-Stem, cf. 4.2.4.2, while the /a/ is parallel to the Arabic patterns with /a/.[142]

The D-Stem is used for an array of meanings, most of which are constructed with an agent, with which the [+INST] is the most prominent trait. Its uses are almost all *basic*, as we have seen that its place in the Gəᶜəz system is as one of the basic stems. Common uses are listed in Table 37:[143]

Factitive	daqqaqa	to grind	daqqa	to be fine
Stative/Ingressive	ḥawwaza	to be/make pleasant	ḥawaza	to be pleasant
Denominative	ᶜammada	to erect a column	ᶜamd	column

Table 37

We see that the factitive function is common, and this makes the D-Stem mostly syntactically transitive. The lack of opposition pairs with the G-Stem has made the D-Stem more readily available for less transitive functions as well, and we find certain experiencer verbs that are either factitive (*to make pleasant*) or just expresses the stimulus (*to be pleasant*). This points to a semantic link between the factitive and experiencer verbs generally. The denominative function is prominent, and it works the same way as the Akkadian D-Stem described above. August Dillmann also claims this *binyan* has a durative or iterative function, but his examples are unconvincing.[144]

According to Henri Fleisch the L-Stem can hardly be ascribed special functions at all. It has come to be a mere variant of the G-Stem.[145] Dillmann calls it an *influencing stem*, and many of the verbs employing this *binyan* are indeed directed towards a second participant that is *human* or at least *animate*. Only these first three steps on the empathy hierarchy shown in Table 6 can assume some influence. He also ascribes it causative and intensive functions.[146] It is therefore mostly

[142] Gragg, 1997, p. 252
[143] The functions and examples are drawn from Dillmann, 1907, pp. 143-146.
[144] Ibid., p. 144
[145] Fleisch, 1944, p. 257
[146] Dillmann, 1907, pp. 146-147

syntactically transitive. There are, however, numerous exceptions, e.g. *ṣāmawa* "to be wearied".[147] It may exist alongside an equiradical G-Stem, but this is rare, and in some of these cases it seems to be a mere form of diversification to mark different meanings, e.g. *dāraga* "to appoint (legal term)" and *darga* "to be unified, coherent",[148] and not really expressing a separate function in itself. We might detect a focus on the [+VOL] parameter, but that aspect of the L-Stem is much more developed in other Semitic languages, and traces of it in Gəᶜəz are perhaps rather an instance of *qui quaerit invenit*.

4.2.2.3. The Gəᶜəz C-Stems

The Gəᶜəz C-Stems perform many of the same functions as the Akkadian Š-Stem. We see that a cause, in the sense of a preceding element, is introduced, and the focus is on the [+INST] property of the syntactically most prominent participant. I will go through the various C-Stems' functions separately. First, the CG-Stem in Table 38:[149]

Causative/factitive	ʾaʾkaya	to make bad	ʾakya	to be bad
	ʾaḫnaṣa	to make so. build sth.	ḥanaṣa	to build
Declarative-estimative	ʾamsala	to declare similar	masla	to be alike
Other	ʾanbaba	to read	nababa	to talk
Denominative	ʾaqʷṣala	to put forth leaves	qʷaṣl	leaf, foliage
Basic	ʾarḫawa	to open	-	-

Table 38

The indistinguishability of factitive and causative derivations from stative verbs was discussed in 2.4.5, and although Thomas Lambdin claims the factitive to be the common function in this instance, the label might just as well be the causative.[150] The causative of a transitive verb becomes doubly transitive. The declarative-estimative function is an extension of the factitive, but the interesting point with the root √msl is the existence of a separate factitive *massala* "to make alike", and the CG-Stem is only invoked to express the declarative counterpart. Dillmann reports a group of CG-Stem verbs that introduce "a peculiar and even unexpected turn to the root-idea".[151] These are labeled *other* here. Whether they are variants of causatives or not is debatable. They are at least not incompatible with an agent that is [+INST]. We see how this works as a basic trait of the CG-Stem in the denominative example above, where the S is [-VOL], but [+INST], i.e. it is a force according to Table 16. The same is true for basic verbs in the CG-Stem. They fit equally well into the CG-Stem as they would have in the G-Stem and have by chance chosen the former when taking linguistic form.

[147] This might be a denominative from *ṣāmā* "toil, labour", but that does not really undermine the point being made here.
[148] Fleisch, 1944, pp. 206-207
[149] The functions and examples are drawn from Lambdin, 1978, pp. 11-113 and Dillmann, 1907, pp. 148-150.
[150] Lambdin, 1978, p. 111
[151] Dillmann, 1907, p. 149

The CD- and CL-Stems are rarer, and this is to be expected as the causative overlaps with the factitive and otherwise highly transitive functions of the D- and L-Stems. Table 39 gives illustrative examples:[152]

CD-Stem	ʾanassəḥa	to cause to repent	nassəḥa	to repent
CL-Stem	ʾalāqasa	to condole with anyone	laqasa (G-Stem)	to mourn

Table 39

The Gəᶜəz C-Stems are causatives or factitives, introducing a cause(r), or at least focusing on the [+INST] of the S or A.

4.2.2.4. The Gəᶜəz t-Stems

The Gəᶜəz t-Stems are formed by prefixing a /t/ to the basic stems. The tG-Stem has the following functions:[153]

Passive	taqatla	to be killed	qatala	to kill
	tafakra	to be explained	fakkara	to explain
Reflexive	taᶜaq(a)ba	to guard oneself	ᶜaqaba	to guard
Anticausative	tarəḫwa	to open (intr.)	ʾarḫawa	to open
Basic	taməᶜəᶜa	to be angry	-	-

Table 40

The t-prefix reduces transitivity, and the A in a clause with a corresponding basic stem becomes an affected S, either performing an action on or for himself, or being submitted to an action, in any case it is [+AFF]. The anticausative is midway between the two in that no cause is specified and need not necessarily be posited. The basic verbs in this stem are such that are construed as taking their most affected participant as their most prominent syntactic argument anyway, and they therefore fit the structure of the tG-Stem. Compared to Akkadian we see that the Gəᶜəz t-Stems take on the functions found with the Akkadian N-Stem as well as t-Stems. This goes to show how close the basic functions of these two stem formations are throughout the Semitic languages.

As seen in Table 40, the tG-Stem is not limited to being a derivation from the G-Stem. It may be passive in D:tG, but this is quite rare, and for the verb *fakkara* "to explain" listed above the more common passive is the tD *tafakkara*. We can also see the anticausative function formed from a basic C-Stem *ʾarḫawa* "to open". The verbs taking this *binyan* as their basic stem express basic notions with affected main participants. The verb *taməʾəʾa* is for instance a stative, being very low in transitivity and taking an [+AFF] S.

The same reduced transitivity is found in the tD-Stem vis-à-vis the D-Stem as well, and this *binyan's* functions are summarized in Table 41:[154]

[152] These examples are drawn from Lambdin, 1978, p. 118 and Dillmann, 1907, p. 150.
[153] The functions and examples are drawn from Lambdin, 1978, pp. 88-90 and Dillmann, 1907, pp. 151-153.

Reflexive-declarative	taṣaddaqa	to think oneself righteous	ṣadqa	to be just
Anticausative	taṣannaᶜa	to harden	ṣanᶜa	to be firm
Passive	tafannawa	to be sent	fannawa	to send away
Passive-declarative	taḥassawa	to be convicted of falsehood	ḥassawa	to lie
Simulative	tadawwaya[155]	to feign illness	dawya	to be sick
Denominative	tanabbaya	to act as a prophet, prophesy	nabiyy	prophet

Table 41

The reflexive-declarative and the passive-declarative (which may both also be estimative as seen with *taṣaddaqa*) are the counterparts to more transitive clauses, and the single participant has become both agent and patient, or the agent is suppressed. Similarly, the tD-Stem accommodates the low transitivity passive and anticausative functions. The simulative is a form of reflexive-declarative that marks an action as less transitive as it is not really carried out, but faked. Even the denominative example above seems a form of reflexive-declarative, and in any case this *binyan* takes in nominal elements that lend themselves to the event structure of the tD-Stem.

The tL-Stem is a similar device that detransitivizes the clauses in which it is employed. Its functions are outlined in Table 42:[156]

Passive	taśāqaya	to be tormented	śāqaya	to torment
Reciprocal	tanāṣara	to look at one another	naṣṣara	to look
Iterative	taḫālafa	to wander to and fro	ḫalafa	to pass, cross over
Directed quality	taśāhala	to have mercy	śāhl	mercy

Table 42

This *binyan* is not only a derivation by /t/ from L-Stems, there are numerous examples of tL-Stem verbs from G- and D-Stems as well. It is used to form the passive and especially the reciprocal, both due to the same mechanisms as described above. What is termed iterative is a function reported by Lambdin, and I believe it is reduced telicity and inner complexity of the event that makes it appear in the tL-Stem. The function called directed quality is an instance of applying a quality in the relationship to another participant. The example above may also be a denominative, but that is not a prominent feature of this *binyan*, and the event enters the system in this *binyan* due to the make-up of the event, not the nature of the noun, e.g. *taqārana* "to attack each other with the horns (*qarn*)".

As we have seen, the Gəᶜəz t-Stems reduce transitivity by directing the action back towards the initiator, resulting in the affected agents of the reflexive and reciprocal, or it may raise the [+AFF] participant while suppressing the agent, thus forming a passive.

[154] The functions and examples are drawn from Lambdin, 1978, pp. 93-94 and Dillmann, 1907, pp. 153-154.
[155] CDG gives this as a tG-Stem, but it is reported as a tD-Stem in Lambdin, 1978, p. 94.
[156] The functions and examples are drawn from Lambdin, 1978, pp. 101-102 and Dillmann, 1907, pp. 154-156.

4.2.2.5. The Gəᶜəz st-Stems

The Gəᶜəz st-Stems are formed by the prefix /ʾasta-/ on the basic stems. Their functions overlap and are notoriously vague, so I will simply sum them up together in Table 43:[157]

Causative	ʾastagābəʾa	to assemble (tr.)	tagābəʾa	to assemble (intr.)
Reflexive	ʾastarʾaya	to show oneself	ʾarʾaya	to show
Curative	ʾastamḥara	to ask for pity	maḥara	to show pity
Delocutive	ʾastabḍaᶜa	to pronounce blessed	baḍᶜa	to consecrate
Estimative	ʾastaḫayyasa	to regard as preferable	ḫesa	to be suitable
Reciprocal	ʾastamāḥara	to ask for mercy from one another	maḥara	to show pity

Table 43

The causative function stands in relation to a reflexive, and the reflexive stands in a relation to a causative in the examples above. The st-Stems are therefore perhaps better labeled reflexive-causative. An alternative meaning of *ʾastagābəʾa* is the more transparent "to take a city, i.e. to cause that a city surrenders itself". The curative function is the causative of a reflexive of autobenefaction. The S or A causes something for itself. The curative verb above also appears in the stL-Stem with reciprocal function added. Reciprocity is typical for verbs in the stL-Stem. They are sometimes not fully reciprocal, but just directed towards a second participant, e.g. *ʾastamāᶜəᶜa* "to bear a grudge", not necessarily mutually. A particular function, reported by Dillmann, is the inclination towards an action. *ʾastamḥara* can also men "to be prone to show mercy". This must be a causative in which the Affectedness is reduced because the action is not carried through, and remains potential. The st-Stems are complicated in that they combine the transitivity enhancing and often valency increasing causative with the transitivity reducing and often valency decreasing reflexive-reciprocal. This inner conflict is resolved in various ways that account for the many functions of these stems.

The delocutive, and the closely related estimative, appear in this *binyan* perhaps to underline the limited Instigation involved in such notions. To pronounce or think something to possess a certain quality involves no direct causative manipulation, and the detransitivizing element /t/ is a marker of this limited Affectedness of the O.

The Gəᶜəz st-Stems are complicated predicates that incorporate both causation and reduced transitivity in many different ways. Any participant can be [+AFF], and this leads to the wide variety of meaning encoded in these *binyanim*.

[157] The functions and examples are drawn from Lambdin, 1978, pp. 226-227 and Dillmann, 1907, pp. 158-160.

4.2.3. Amharic

4.2.3.1. The morphology of the Amharic System

Amharic shows a bewildering array of verbal stems, and to keep the elements apart we will operate a twofold stem distinction in this section. First there are six classes of verbal stems, and we will call them verb types. These are the basic types A, B and C, and the reduplicated type. The former three are underived, while the latter is a morphologically derived form that takes the same pattern for A- and B-Type verbs, but still marks the /a/ in C-Type verbs. In addition the types A and B may form a derived C-Type. The non-reduplicated stems will be referred to collectively as G-Stem(s), while the reduplicated stems are called Red-Stems. These labels are used to align the description with that of the other Semitic languages.

Basic Types		**Derived Types C**	**Red[uplicated] Type**
A	säbbärä[158]	lakkäkä	säbabbärä
B	fällägä		
C	marräkä		mararräkä

Table 44

The morphological distinction between A- and B-Types is not evident from Table 44. It is in the prefix conjugation that we find a difference between a single R_2 in the A-Type, and a double R_2 in the B-Type, e.g. *yə-säbr* and *yə-fälləg*. These verb types are then cast in the various *binyanim* listed in Table 45:[159]

Stems	**Example**	
G-Stem	säbbärä	”to break”
tä-Stem	tägäddälä	”to be killed”
a-Stem	abäqqälä	”to make or cause to grow”
as-Stem	astäkkäzä	”to cause to be sad”
a(t)-Stem	aggaddälä	”to cause to kill each other”
an-Stem	anžäbbäbä	”to glide, hover”
tän-Stem	tänbäššäšä	”to be spoiled”
aš-Stem	ašqädaddämä	”to try to og ahead of, compete in doing”
täš-Stem	täšq^{w}aṭṭäṭä	”to be restless”
astä-Stem	astämarä	”to teach”
tästä-Stem	tästänaggädä	”to be entertained”

Table 45

[158] I use the 3Sgm suffix conjugation as citation form throughout this discussion.

[159] I use the actual prefixes to refer to the various *binyanim* in Amharic. This is done because the various consonantal elements are combined in so many ways that it would be impractical to use the labels t-Stem, N-Stem and so forth. As for the G-Stems the A- and B-Types correspond to G-Stems in other Semitic languages, but whether the D-Stem should be read into them is unclear as many of the functions of the Red-Stem are more similar to those of D-Stems in the other languages. The C-Type corresponds to L-Stems.

4.2.3.2. The Amharic G-Stems

4.2.3.2.1. Type A and B

The exact nature of the categories relevant for distinguishing A- and B-Types, if they are anything more than random lexical features, remain an elusive subject in Ethio-Semitic research. An attempt to establish a distinction based on transitivity and a diachronic model was made by Grover Hudson,[160] but his results are unconvincing, if not unintelligible.

Wolf Leslau merely calls the distinction lexical, albeit noting that the B-Type is mostly transitive.[161] My analysis of the distinction shows that it is not made clearer by applying a more complex notion of transitivity, as it has been developed in this thesis.

From the Ethio-Semitic language Chaha we know that a similar distinction is based on the relative sonority of R_2 and R_3, but such an analysis does not yield results on the Amharic material. When taking a closer look at the radicals I think we can establish quite firmly that there are virtually no A-Stem verbs with palatalized consonants as R_1. This leads us to look for an element that may simultaneously cause gemination of R_2 and palatalization of R_1 as at least part of the solution to the enigma of this distinction. Degif Petros Banksira, in his "Sound Mutations – the morphophonology of Chaha" makes an excursus on exactly this topic.[162] He suggests that the B-Type is really a quadriradical with an /i/-element as R_2 (it can sometimes even be a /u/-element). This /i/ can cause palatalization of R_1 and compensatory lengthening of R_2 when it disappears. There are traces of the same element in Chaha and other Ethio-Semitic languages. It would be interesting to compare the vowel classes of other Semitic languages to the A- and B-Types in Amharic. We see for instance that the verb *č̣ällämä* "to grow dark" is a B-Type and that the cognate in Arabic, *ḍalima*, is of the i-a-Class, but I have not been able to establish whether the supposed /i/ of the Amharic verb and the /i/ following R_2 are reflexes of the same phoneme. I should also acknowledge that Banksira's theory is incomprehensive. He only claims that the verbs stemming from quadriradicals with an /i/ as R_2 belong to the B-Type, not that this holds for all B-Types.

4.2.3.2.2. Type C

The C-Type verbs are also lexically determined, but there are certain clusters of semantics within the type due to the form being a remnant of the L-Stem. This explains syntactically transitive verbs directed towards another participant which is mostly human, e.g. *barräkä* "to bless someone". The type also incorporates verbs that are not historical L-Stems, such as quadriradicals with a laryngeal as R_2, e.g. *marräkä* "to take prisoner" from the earlier quadriradical root √mhrk. Furthermore, it seems that the C-Type has been used to accommodate meanings vaguely linked or not linked at all to

[160] Hudson, 1991
[161] Leslau, 1995, pp. 283-284
[162] Banksira, 2000, pp. 83-88

corresponding A- and B-Stems, e.g. *laqqäqä* "to release the debtor after surety has been given" – *läqqäqä* "to let go", and *qazzänä* "to wander about" – *qäzzänä* "to have diarrhea".

4.2.3.2.3. The Reduplicated type

This section discusses the functions of the Red-Type of the basic stem. These are derivations from the A-, B-, and C-Type verbs formed by infixing a syllable of R_2 before the R_2 itself. The functions of this *binyan* are shown in Table 46:[163]

Intensive	säbabbärä	to shatter	säbbärä	to break
Pluralic	käfaffälä	to cut up (into many pieces)	käffälä	to divide
Increased area	bätattänä	to scatter all over	bättänä	to scatter
Frequentive/ Repetitive	läwawwäṭä	to vary (tr.), change completely	läwwäṭä	to change (tr.)
Thorough	käsassärä	to go completely bankrupt	kässärä	to be bankrupt
"all over"	šärarräfä	to nibble all over, wear away (tr.)	šärräfä	to chip, notch
Infrequency	kärarrämä	to spend some time now and then	kärrämä	to spend a certain time
Attenuation	säkakkärä	to be somewhat tipsy	säkkärä	to be drunk
Less Affectedness	qämammäsä	to taste/eat a little	qämmäsä	to taste
In a hurry	läbabbäsä	to dress quickly	läbbäsä	to dress
Ingressive (time)	nägagga	to begin to dawn	nägga	to dawn

Table 46

We see that many of these functions coincide with those attributed to the D-Stem in other languages. This is true of the intensive and the pluralic. The thorough function marks an increased [+AFF], as does the increased area function. These are similar to the intensive, which, as we have seen, is ultimately traceable to the factitive function. In the Red-Stem, however, no new participant is introduced, and the S or A remains the same. The action itself may be pluralized in the frequentive/repetitive, but from the example we see that it may at times be read as more thorough as well. The function called "all over" by Leslau seems to be a repetitive or gradual action, in which the O is increasingly Affected. So far the discussed functions have been highly transitive, with thorough transfer of the action to the O. Notwithstanding, the functions labeled infrequency, attenuation and less Affectedness reduce transitivity. The action is less completely carried through and the O is only partially affected. This can be applied to states as well as actions. The Red-Stem may also express hurried action, and the specific nuance of entering a time of day.

The Amharic Red-Stem is remarkably heterogeneous, with seemingly conflicting functions expressed by the same morphological device. Generally it seems to be a two-way deviation from

[163] The functions and examples are drawn from Leslau, 1995, pp. 455-461.

matching unreduplicated G-Stems where the Red-Stem expresses either relatively more or less Affectedness.

4.2.3.3. The Amharic tä-Stem

The functions listed for the tä-stem are laid out in Table 47, but further classes of behavior which are not so apt for isolated representation in a table are discussed below, viz. the potential, generalized impersonal, and sarcastive:[164]

ABC	**Passive**	tägäddälä	to be killed	gäddälä	to kill
	Reflexive	täläyyä	to dissociate oneself	läyyä	to separate
	Intransitive	tämälläsä	to return	mälläsä	to return sth.
	Anticausative	täsäbbärä	to break (intr.)	säbbärä	to break (tr.)
	Basic	täqämmäṭä	to sit down	-	-
Red	**Passive**	täkäfaffälä	to be divided	käfaffäla (käffälä)	to divide up (to divide)
	Reciprocal	tänäkakkäsä	to bite one another	näkkäsä	to bite
	"all over"	täzäwawwärä	to roam, wander about	zäwawwärä	to move around

Table 47

The passive function reduces valency by one and raises the patient to S. The underlying agent may be expressed in an oblique phrase introduced by the preposition /bə-/. This holds for highly transitive verbs, as a certain Affectedness of an object must be present for a passive construction to be semantically grammatical. The reflexive is similar in that it reduces the valency by one through conflation of the agent and another participant (a patient or a beneficiary) into the S. The category vaguely named "intransitive" above stems from Leslau's exposition of the functions of the tä-Stem. He admits that this category is very similar to the reflexive,[165] but the examples of reflexives he provides us under §71.5[166] are rather anticausative. In any case, the result of passivization, reflexivization and anticausativization would always be a formally intransitive verb, and in the paragraph discussing just the intransitive function of this stem (§71.2)[167] we find reflexive examples, and *tämälläsä* "he returned" which, leaving the possible passive reading aside, is not really reflexive, but an unaccusatives intransitive verb of motion.

The reflexive verbs of this category appear in two variants. The first is the typical reflexive where the underlying agent and patient are the same, conflating in the surface S, i.e. the action is directed by the agent towards itself, and no nuance between the origin and the endpoint of the action is admitted. This can be seen in *taṭṭäbä* "he washed himself", and the construction is

[164] The functions and examples are drawn from Leslau, 1995, pp. 462-467.
[165] Leslau, 1995, p. 463
[166] Ibid., p. 463
[167] Ibid., p. 463

synonymous with the periphrastic reflexive in Amharic in which the noun *ras* "head" acts as a dummy object directing the action back to the actor, e.g. *rasun gäddälä* "he killed himself". The second reflexive denotes actions were the object is part of the agent, and the construction is formally transitive, but semantically the distinctness of participants is low, and that is presumably why such verbs pattern with valency-reducing mechanisms such as the passive, reflexive, and anticausative, in this case appearing in the tä-Stem. An example would be *əǧǧʷan taṭṭäbä* "he washed his hands".[168] The object is highly individuated from the background, but being an integral part of the agent the verb takes on an autobenefactive function in this case, and we might consider the agent [+VOL, +INST, +AFF], an affected agent, just as the agent in the fully reflexive example above.

We have so far encountered tä-Stem functions that are either valency-reducing, raising the affected entity to the most prominent syntactic position, or autobenefactive, which also allows for reading the most prominent syntactic constituent as the most relevant affected entity. Marking the affectedness of the participant assuming the slot S/A therefore seems to be the function of the tä-Stem so far.

As for those verbs that appear in their basic form in the tä-Stem, we would expect there to be semantic affinities between them and the derived tä-Stem verbs that facilitate their incorporation into this verb pattern even though they are not overtly derived and are therefore not members of an opposition pair. There is however little that unites these verbs, except perhaps that of the 33 instances reported throughout Leslau's grammar[169] only *taddägä* "to save, deliver" can be read as fully transitive. Taking stative verbs to be automatically affecting their S, we also find that almost all these verbs affect their subject (S or A) in some way. That is, they show a minimal similarity when we adopt a minimal definition of the category *middle*. The only exceptions to this would be *tazzäbä* "to make critical observations" and the denominative *täqäññä* "to compose poetry". These two are in any case effective verbs, and do therefore not affect their objects, thus representing reduced transitivity after all. The observation that the tä-Stem marks affectedness of S/A therefore still holds, and if we want to include the two effective verbs just mentioned, we might say that it signifies that no other participant (besides the one coded in S or A) is more affected.

An interesting interaction between the *binyan* and the tense/aspect conjugations is the possible reading of prefix conjugation or participle tä-Stems as *potential*, i.e. an English translation could be rendered by the endings /-able/-ible/. This is perhaps most felicitous with the relative prefix *yämmə-*, for instance in the clause *andand asawočč yämmibbällu naččäw* "some fish are edible". This seems to be an extension of the passive, and it is worth mentioning that the transitivity in these cases are further reduced as the action is not really carried out, at least not yet, and it might never

[168] Leslau, 1995, p. 464
[169] Leslau, 1995, passim.

be. That means the contribution of the prefix conjugation in this case is a parameter switch from [+AFF] to [-AFF].[170]

The tä-Stem is also used in two particular constructions called the "generalized impersonal" and "irony and sarcasm". Both are constructed in the third person, and the former denotes an event with an indefinite agent. That means it is mostly read as a habitual expression. Again we find that an event with low transitivity is cast in the tä-Stem. The impersonal construction does not individuate a clear agent, and distinctness of participants is not only a measure of distinguishability between two participants, but also of how distinct they are against the general background of the event. Further, the habitual aspect denotes reduced transitivity as an object would be read as either partly affected in each instance, or several objects would have to be posited. In cases where the verb take no object the transitivity is low in any case. As for the function denoting irony or sarcasm, it might be an extension from the impersonal, but in any case it denotes a special usage and is even marked by raised intonation. From Leslau's examples it would seem such expressions can be used both to address someone and to speak about them. The *sarcastive* is really a mood as it marks the speaker's attitude towards what he is saying, and the message conveyed is a form of irrealis in which we are to understand that the state or event doesn't hold (when contradicting what someone else has expressed or seems to express), shouldn't hold, or is indeed ridiculous. The *sarcastive* might even be considered a "collection of related modalities" because of these related usages.[171] An illustrative example from Leslau is *suf täläbbäsänna yəkk^{w}ärrall* "(look at him), he puts on a wool suit and is all vain (arrogant)".[172] The agent did in fact put on the wool suit and is indeed acting vain, but the construction with a tä-Stem marks that the speaker thinks he ought not to have done it and act that way.

When the tä-Stem appears with an /a/ after the first radical, this gives rise to particular functions. To call this a tä-Stem with type C is purely a convenience and might obfuscate the actual situation under investigation somewhat. It is not the case that these tä-Stems with /R_1a/ always stand in relation to G-Stem verbs with /R_1a/. This means that we are in point of fact dealing with a separate *binyan*. For historic reasons we might call it a tL-Stem, as the /a/ corresponds to a long vowel in earlier stages of Ethio-Semitic,[173] and we find clear parallels in for instance Arabic where both form and function of the tL-Stem resemble the *binyan* we are now inquiring about.

The passive is a widely attested function of the tä-Stem C-Type verbs when these exist in the G-Stem, and this is therefore a relational function on par with the A and B type verbs taking the /tä-/

[170] Further related functions called "permissible" and "is to do, is to be done, can be, cannot be" are reported in Leslau, 1995, pp. 464-465
[171] Haiman, 1995, p. 330
[172] Leslau, 1995, p. 467
[173] Lipiński, 1994, p. 165

prefix that was properly discussed above. We now turn to such verbs appearing only in the tä-Stem, or tä-Stem verbs without corresponding G-Stems with type C. The functions for this binyan, as listed by Leslau, are:[174]

Reciprocal	tägaddälä	to kill each other	gäddälä	to kill
Basic	täqaṭṭälä	to burn, be on fire	-	-
Denominal	täraqq^{w}ätä	to be naked	raqut	nakedness
Habitual	tänakkäsä	to bite all the time	näkkäsä	to bite

Table 48

The reciprocal function is labeled "reciprocity or participation" by Leslau, and we find many examples that deviate from the straightforward *tägaddälu* "they killed each other" where the subjects are both agents and patients. The function of the tL-Stem seems rather to be to indicate that the plural subject is the (most) affected entity. Consider for instance the clause *dabbowən täkaffälu* "they divided the bread among themselves". Here we have a direct object, highly individuated and therefore afforded the (definite) direct object marker /-(ə)n/, which is obviously affected by the action, but as with the affected agent readings of ingestive verbs we could argue that the beneficiaries, which are in this case conflated with the agents, are the most relevantly affected entities. Another case in point is the verb *tälammädu* "they got used to one another/they got used to something". If the second reading is adopted this is not a reciprocal at all. It would, however, still hold that the subject represents the most affected entity, as an object, person or situation that one gets used to is hardly affected at all.

The verbs with the C-Type tä-Stem as their basic form show various types of meanings, but with the exception of *täsalläqä* "jest, laugh at" they are directed towards the subject or implies a benefit for the subject.

Much of the same can be said of the denominatives in this *binyan*, but the inclination to accommodate reciprocal (in the very extended sense used above) is evident, e.g. *täwädağğä* "fraternize" from *wädağ* "friend".

Finally, the habitual function of this *binyan* may come into play in the prefix conjugation or with the participle. The verbs in these cases behave syntactically just like they would have done without the /tä-/ prefix and the /a/, and this leads us to conclude that this stem is employed here to mark reduced transitivity in the imperfect environment. The affectedness is partial when presenting something as being habitual.

To sum up the findings, we can say that the tä-Stem marks affectedness of the subject (S or A). This core mechanism makes the *binyan* open for the functions such as the passive, reflexive,

[174] Leslau, 1995, pp. 469-472

and anticausative, which all have affected S/A as one of their traits. The *binyan* is also ready to accommodate other predicates which select a subject that may be construed as affected.

A corresponding function of the tä-Stem is to reduce the affectedness of a non-subject, and this accounts for the generalized impersonal. All this will sometimes entail valency-reduction, but that is only a secondary effect of the prominence afforded a subject that is also affected. In many circumstances a remaining argument carries only less prominent information as it is a less affected participant, or the agent which has been relegated to a secondary position by the focus shift that the passive implies.

The C-Type tä-Stem also focuses on the affectedness of the subject, which is mostly, but not necessarily, plural with this *binyan*, and this makes it an ideal conveyer of the reciprocal as well as other expressions of mutual benefit. This may also amount to valency-reduction as the affected entity is also the controlling entity.

4.2.3.4. The Amharic a- and as-Stems

Both the a-Stem and the as-Stem generally function as causatives, and formal transitivity of the corresponding G-Stem verb seems to determine which causative prefix is employed. Leslau gives a statistical overview in §73.3 presented in Table 49:[175]

G-Stem			a-Stem	as-Stem
Type A	Intransitive	135	120	15
	Transitive	120	30	90
Type B	Intransitive	55	45	10
	Transitive	235	10	225
Type C	Intransitive	62	61	1
	Transitive	33	5	28

Table 49

We see a clear tendency for intransitive G-Stem verbs to take the a-Stem causative and for transitive G-Stem verbs to take the as-Stem. The functions of the a-Stem as described by Leslau are listed in Table 50:[176]

Causative	abäqqälä	to cause to grow	bäqqälä	to grow
	abälla	to feed	bälla	to eat
Factitive	aräṭṭäbä	to moisten	räṭṭäbä	to be wet
Transitive	anäddädä	to burn sth (tr)	näddädä	to burn (intr)
Denominative	aqäṭṭälä	to send out leaves	qəṭäl	leaf
	anägga	to stay up until dawn doing…	nägga	to dawn
Basic	aläqqäsä	to mourn	-	-
	agaddälä	to incline	-	-

Table 50

[175] Leslau, 1995, pp. 473-474. Verbs from roots with R_1=ʾ are excluded.
[176] These examples are drawn and adapted from Leslau, 1995, pp. 473-478.

The causative in the a-Stem is most often direct with concrete manipulation. The transitive verbs that take this *binyan* as their causative counterpart are mostly affected agent verbs, such as ingestives.[177] A certain affectedness of the agent in the G-Stem verb may also be the reason why *läbbäsä* "to dress oneself" takes an a-Stem causative, i.e. *aläbbäsä* "to clothe someone". Whether a factitive function should also be posited for the a-Stem is unclear. My example above is based on Leslau's list of verbs which he calls "Verbs of state become **transitive**".[178] As we have seen, the causative and factitive are inseparable with such stative verbs, so this might not be a separate category from the causative at all. The so-called transitive function is harder to classify as either causative or factitive. I think the focus is on the [+INST] of the cause(r), more than on the [+AFF] of the causee or object, but only a systematic correlated investigation of these factors in the rest of the verbal system (conjugations, negation, coordination etc.) could reveal the exact properties of factitives and causatives. In this regard the reported, although rare, occurrences of an estimative function in this *binyan* are important.[179]

There are some denominatives in the a-Stem, including expressions of "doing something at a time of day". We saw in 4.2.1.5 that this was also a function of the Akkadian Š-Stem. Such verbs are mostly inchoative, and therefore underline the [+INST] aspect of causative verbs. There are also basic verbs in this *binyan*, but it is difficult to see what properties would facilitate their employing this stem as the basic one. This is a case of inexplicable deponency. Such verbs are causativized by the as-Stem. A related phenomenon is verbs appearing in both a G-Stem and the a-Stem without discernible differences in meaning, e.g. *m^{w}alläḫä* and *am^{w}alläḫä* "to be slippery". There is a phonological restriction on verbs with R_1=ʾ which cannot occur in the a-Stem, and take the as-Stem as the causative. Moving on, we will now examine the functions of the as-Stem:[180]

Causative	aswässädä	to cause to take	wässädä	to take
	askässämä	to cause to wither	kässämä	to wither
Factitive	betun asṭäbbäqäw	he had him guard the house/ he had the house guarded	ṭäbbäqä	to guard
Forcing	askedä	to drive away, make go	hedä	to go
Permissive	askedä	to lead (allow to go)	head	to go
Adjutative	asazzälä	to help carry (a baby) on the back, put a baby on the back for so. to carry	azzälä	to carry on the back

Table 51

The causative expressed by the as-Stem is often indirect, affording the causee some Volition. This is the clearest evidence for a non-factitive causative function. Other verbs, such as *askässämä* above,

[177] The seemingly anomalous way that such verbs form causatives has been pointed out and explored on several occasions by Mengistu Amberber. See for instance Amberber, 2000 and Amberber, 2009.
[178] Leslau, 1995, p. 475
[179] Leslau, p. 476
[180] These examples are drawn and adapted from Leslau, 1995, pp. 480-485.

are direct causatives, and as long as the corresponding G-Stem is either stative or unaccusative there is no room for Volition in any case. Leslau further describes as-Stem verbs expressing the notions "have or let someone perform the action of the basic stem" or "have the action of the basic stem performed by someone". These are obvious factitives, where the O of the underlying clause are put in a new state, and the focus is on this result rather on the Instigation of the action. We see that the intermediary/causee (*the guard*) may even be suppressed, mimicking a passive. This function, factitive through intermediary, is seen as the primary one of the as-Stem by many researchers of Amharic.[181] It seems, however, that the material lends itself more readily to an explanation in terms of the causative continuum, where the factitive through intermediary, the permissive, and the adjutative are instances of less direct causation.

The Volition of the causee is marked as [-VOL] with the forcing function, and the Instigation of the cause(r) overrides it. We see that a permissive is a variant of this that specifies the [+VOL] of the causee. The same verb is used to illustrate the two functions above. Finally, in agreement with Shibatani's observations on the sociative as a middle position on the causative continuum,[182] we see that the as-Stem may function as an adjutative in which the causer performs the action with the causee. In Amharic this conveys the meaning "help to perform".

It seems that there is a difference in force of the [+INST] parameter of the cause(r) between the a- and the as-Stems. The former tend to be more directly involved in the action, while the latter may supply the Volition, but does not always involve itself in performing the action, and when it does it may be as helper, commander, and other roles demanding less effort. The fact that denominatives, including "time of day"-verbs appear in the relatively more instigating *binyan*, while the permissive appears in the relatively less instigating supports this claim.

To summarize, both the a- and as-Stems introduce a cause element, expressing both factitive and causative notions. The former takes a cause more directly involved in the action, while the latter takes a cause that is more often indirectly involved in the action. They are valency and transitivity increasing.

4.2.3.5. Other Amharic stems

A combination of the a- and tä-Stems are found in the a(t)-Stem.[183] The functions of this *binyan* are presented in Table 52:[184]

[181] This is true of both Marcel Cohen and Franz Praetorius, cf. Appleyard, 1972, pp. 18-19.
[182] Cf. 2.4.5.
[183] The parenthesis is used because the /t/ always assimilates with the R_1 of the verb.
[184] These examples are drawn and adapted from Leslau, 1995, pp. 486-489.

Reciprocal causative	aggaddälä	to make someone kill each other	gäddälä	to kill
Factitive	aqqanna	to straighten out	täqanna	to be straight
Declarative-estimative	akk^{w}assäsä	to belittle	k^{w}ässäsä	to be inferior to others in possessions
Adjutative	akkaffätä	to help open	käffätä	to open
Causative of Red	allaläkä	to cause to send repeatedly	lakä	to send

Table 52

We see that the a(t)-Stem expresses causativity with reduced transitivity. The only pure causative is formed from Red-Stems that are already iterative. Furthermore, we see that it may accommodate factitives and the related declarative-estimative. The less than prototypical causative is also represented in the reciprocal causative and the adjutative, which is a form of sociative causative, cf. 2.4.5.

The remaining *binyanic* formations are rare and non-productive, and I will refer to Table 45 for examples. The an- and tän-Stems form verbs of movement and emitting sound or light, as well as some stative verbs of emotion.[185] They are syntactically intransitive, and as both unaccusative and unergative variations may be said to take an affected S, these might be N- and tN-Stems, relatable to the formations in the other languages. The aš- and täš-Stem verbs are predominantly causative, and most have a velar consonant as R_1.[186] It seems the velar has changed the /s/ of as-Stems into an /š/. Finally, the astä- and tästä-Stems are reflexive-causatives, mostly of verbs with R_1=/ˀ/.[187]

[185] Leslau, 1995, pp. 491-492
[186] Ibid., pp. 485-486
[187] Ibid., p. 490

4.2.4. Arabic[188]

4.2.4.1. The morphology of the Arabic System

These are the morphological categories, as described in the tradition, that will be discussed here:[189]

Form	Label	Example[190]	
Form I	G-Stem	ḍaraba	ya-ḍrib
Form II	D-Stem	farraḥa	yu-farriḥ
Form III	L-Stem	sāᶜada	yu-sāᶜid
Form IV	C-Stem (ʾ)	ʾaṣbaḥa	yu-ṣbiḥ
Form V	tD-Stem	takallama	ya-takallam
Form VI	tL-Stem	taᶜānaqa	ya-taᶜānaq
Form VII	N-Stem	inġalaqa	ya-nġaliq
Form VIII	Gt-Stem	iftaraqa	ya-ftariq
Form IX	R-Stem	iṣfarra	ya-ṣfarr
Form X	st-Stem	istaġfara	ya-staġfir

Table 53

From this table we see that the system can be subdivided into various morphologically more closely related groups. The G-, D-, and L-Stems have corresponding t-Stems, the N- and R-Stems do not. The remaining *binyanim*, the C- and st-Stems share certain features, and we have seen that the st-Stems in Gəᶜəz are reflexive-causative, indicating a causative force with the /s/ element. The system may therefore be realigned thusly:

G-Stem	**Gt-Stem**
D-Stem	**tD-Stem**
L-Stem	**tL-Stem**
C-Stem	**st-Stem**
N-Stem	
R-Stem	

Table 54

Only the G-Stem subcategorize for vowel classes, and among the derived stems there are various groups of vowel patterns. The D-, L-, and C-Stems take a /u/ in the personal prefix in the prefix conjugation, the tD- and tL-Stems use /a/ throughout their suffix and prefix conjugations, and the Gt-, st-, N-, and R-Stems all emply an /a-i/ pattern in the prefix conjugation.

[188] I do not distinguish between classical Arabic and Modern Standard Arabic (MSA) in this presentation. The differences in the *binyan* system are negligible.

[189] See for example Wright, 1896-98, pp. 30-49, Fischer, 2002, pp. 98-101 or Haywood & Nahmad, 1965, pp. 152-153 for the traditional accounts of the system. The *binyanim* are often called *forms* and enumerated with roman numerals in Western grammars of Arabic. I will give the order according to this system in this table, but henceforth the common labels will be used.

[190] I give the suffix and prefix conjugations here, the final vowel that is part of the personal conjugations in the suffix conjugation and the modal conjugations in the prefix conjugation, are therefore not relevant here. They are only included so as to use actual grammatical forms as examples. The /i/s on the N-, Gt-, R-, and st-Stems are epenthetic and not important here.

4.2.4.2. The Arabic G-Stem

The Arabic G-Stem is the only stem that incorporates an inner distinction in vowel classes, marked on R_2. As we saw with the Akkadian G-Stem vowel classes in 4.2.1.2, there are no absolute distinctions within the Arabic system. The observed classes are shown in Table 55:

Vowel class	Example (suffix – prefix conjugation)	
a-i	qaṣada – yaqṣidu	"to mean, persue something"
i-a	ḍamina – yaḍmanu	"to guarantee, insure"
a-u	ṭaraqa – yaṭruqu	"to knock (on door)"
u	kabura - yakburu	"to be(come) big"
a	ḏahaba – yaḏhabu	"to go, walk"

Table 55

There are only general tendencies within this system, but we find mostly stative verbs in the i-a- and u-Classes. The a-Class is phonologically determined, incorporating verbs with a glottal, laryngeal, or pharyngeal consonant as R_2 or R_3. Some verbs with semivowels in these positions also appear in this class. Contrary to Akkadian we see the vowel class system in Arabic exploited to express diathesis differences, although this is not widely productive, e.g. *šalla – yašallu* "to be paralyzed" and *yašullu* "to paralyze", *šaqiya – yašqā* "to be unhappy" and *šaqā – yašqū* "to make unhappy". This associates the a-u-Class with transitive verbs, and we see a higher degree of transitivity throughout this class, regardless of syntactic transitivity. Finally, the a-i-Class shows no specific traits, neither with regard to transitivity nor phonological constraints.

4.2.4.3. The Arabic N-Stem

The Arabic N-Stem is most often described as a passive derivation from the G-stem, but a closer look reveals an array of functions, summarized in Table 56:[191]

Passive	indarasa	to be exterminated	darasa	to exterminate
	inġalaqa	to be bolted	ʾaġlaqa	to bolt
Reflexive-causative	inbaṭaḥa	to stretch oneself, prostrate	baṭaḥa	to throw to the ground, prostrate
Anticausative	inbasaṭa	to spread, expand	basaṭa	to flatten, spread
Reflexive-permissive/tolerative	inḫadaᶜa	to let oneself be fooled	ḫadaᶜa	to fool

Table 56

These functions are all valency reductions. The resulting verbs are mostly formally intransitive unaccusatives, but the reflexive-permissive and reflexive-causative categories seem to be exceptions. We can see that the only transformation common to all these verb alterations is the shift in the

[191] These functions and most of the examples are drawn from Wright, 1896-98, pp. 40-41, Fischer, 2002, p. 100, and Gaudefroy-Demombynes & Blachère, 1937, pp. 63-64.

subject from [AFF-] to [AFF+], or put differently, the O of the G-Stem verb becomes the S of the N-Stem and the only feature that is consistently carried over is the [AFF+].

Table 56 above does not indicate the relative frequency of the various functions of the N-Stem, and it should at least be mentioned that the reflexive-causative seems to be extremely rare. This is significant as it tells us that the [VOL+, INST+, AFF+] configuration, i.e. the affected agent, is not typical for the Arabic N-Stem, and it might even be an idiosyncratic instance. If we examine its entry in Wehr's dictionary more closely we find that it is first listed as passive "to be prostrated" and later as an anticausative "to extend, stretch". Between these two meanings the assumed reflexive-causative "to lie prostrate, sprawl, stretch out" is given, and whether this is to be read as an active and controlling agent performing the action on himself or as a meaning that in each case chooses a more passive or a more anticausative reading is not really clear.[192] This means that another limitation can be added to this *binyan*, i.e. the S cannot be both [+VOL] and [+INST]. The common feature with all these functions is that the S enters a state. We have seen that the passive in itself induces staticity, and the same is true for the other functions. **It is this establishment of the [+AFF] of the S that summarizes the Arabic N-Stem.**

4.2.4.4. The Arabic D-Stem

The morphological characteristic of the Arabic D-Stem is the doubling of the second radical, and the functions I was able to retrieve for this stem are summarized in Table 57:[193]

Factitive	farraḥa	to gladden	fariḥa	to be glad
	ḥammala	to make carry	ḥamala	to carry
Intensive/Extensive	ḍarraba	to beat violently	ḍaraba	to beat
Declarative-Estimative	kaḏḏaba	to think/call so. a liar	kaḏaba	to lie
Dephrasal	ǧaddaᶜa	to say "may thy nose/sth be cut off!" to so.	ǧadᶜan laka	may thy nose/sth be cut off!
Directional	šarraqa	to go to the east	šarq	east
Denominative	ṣawwara	to photograph	ṣūra	picture

Table 57

The factitive function is prominent in the Arabic D-Stem. The added cause(r) leads to valency increase in many cases, both with monovalent and divalent corresponding G-Stems. In some cases the factitive only leads to an increased [+INST] in the already existing agent. This may be coupled with increased [+AFF] in the O, and this is the foundation for the Instensive/Extensive function.

When examining intensive/extensive verbs we find that the intensity or extension may apply to various aspects of the actions in question:

[192] Cf. also *inbasaṭa* "to extend" that has only the anticausative reading.
[193] These functions and most of the examples are drawn from Wright, 1896-98, pp. 31-32, Fischer, 2002, p. 99, and Gaudefroy-Demombynes & Blachère, 1937, pp. 50-53.

of force	ḍarrab	to beat violently	ḍarab	to beat
of time/frequency	ǧawwal	to go around much/often	ǧāl	to go around
of number	barrak	to kneel down (several subjects)	barak	to kneel down
of distribution	ǧarraḥ	to wound many (several objects)/to inflict so. with many wounds	ǧaraḥ	to wound

Table 58

The first of these seem to increase transitivity as the transfer of the afflicting action is more thorough or complete, but the remaining three variants of intensity or extension reduce transitivity as they denote iterativity or less distinct participants as either the A or O appears in the plural. The solution to this is the double effect of the non-participant increasing factitive, as described above. The stronger Instigation may or may not be correlated with a stronger Affectedness, and this can produce all the variants of the intensive mentioned in Table 58. A verb taking several subjects, however, like *barraka* "to kneel (many)", seems to be a very limited function of the D-Stem, and it is this same verb that is repeated throughout the literature to illustrate it.[194]

As for the declarative-estimative function, it is an extension of the factitive, as we have seen. The A brings about the state/action of O, at least in the discourse universe from the point of view of the A. Language is not really concerned with truth, so calling someone a liar, or not even expressing it but to oneself, is a form of factitive.

This leaves us with the denominative, dephrasal and directional functions of the D-Stem. It seems that they are all unergatives, exerting control over the action, but enumerating the wide array of relations between S or A and the nominal source of the derivation could hardly point out interesting generalizations. It seems that these functions are cast in D-Stem just as much for morphological reasons. It is a pattern that easily accommodates all roots and without imposing semantically significant vowel patterns on them. That being said, a factitive base seems ideal for denominative derivation. The resulting verbs often take meanings like "making NOUN, removing NOUN, applying NOUN", which all deal with "making something _ed". The morphological agility of the D-Stem is in any case the better explanation for the dephrasal and directional verbs. These also illustrate how the various *binyanim* can accommodate events because of certain properties they possess, as there is no directly corresponding G-Stem of a directional verb like *ġarraba* "to go west", only an indirectly related verb *ġaraba* "to go away".

Finally, Lipiński points out that another complicating factor with the Classical Arabic D-Stem could be that some verbs appearing in this form are borrowed from South Arabian where the prefix

[194] Wright, 1896-98, vol. I, p. 31

conjugation of the G-Stem takes a doubled middle radical, and this has in turn been metanalyzed in Arabic as a D-Stem.[195]

The Arabic D-Stem is factitive, and also fill related functions like the intensive, declarative-estimative etc. It is morphologically suitable to accommodate elements such as nouns or phrases.

4.2.4.5. The Arabic L-Stem

The morphological relationship between D- and L-Stems is quite close, and Lipiński has suggested that they were a joint transitive conjugation in opposition to a G-Stem intransitive conjugation in earlier stages of Semitic. The -vCC- and the -v̄C- would therefore have been free variations, and the distinction between them was introduced later.[196] I will not adopt this view here, but it is an indication that there seems to be a rather close relationship between these two forms. The question is what distinguishes them, at least in CA/MSA. We may start with the functions that the L-Stem seem to fulfill:[197]

Effort/Attempt	qātal	to try to kill/fight with	qatal	to kill
Reciprocal	kātab	to correspond with so.	katab	to write
Associative	sāᶜad	to help so.	saᶜid/suᶜid	to be happy
Transitive	kātab-a-hu	to write to so. (ACC)	katab ʾilā	to write to so. (OBL)
Directed quality	ḫāšan	to treat so. harshly	ḫašun	to be harsh
Factitive/Causative	sāqaṭ	to make fall	ʾasqaṭ	to make fall
Denominative	sāfar	to go on a journey	safar	journey

Table 59

All functions, except the denominative, seem to focus on including someone else in the action. At least when considering these examples, we get the impression that this other participant that they direct the action towards is *animate*, and perhaps more specifically *human*. The second participant is therefore a potential agent in that it is capable of Volition and Instigation. In Fassi Fehri's approach the long vowel is seen as the plurality marker, having been moved one step forward from the middle radical, and in its new position it can only impose plurality on the Specifier, not on the Head, and an intensive/extensive reading is thereby excluded. This means that the L-Stem casts an event as allowing two agents. It is not, however, fully reciprocal. It only includes another, less prominent, agent in the action, as an associate agent, which is cast in the accusative to mark its lesser status. They are both involved in the same real-life event, but one of them is given prominence in the linguistic articulation of this event. In Fassi Fehri's terms, the internal displacement of the extra morphological element has created a two-segment head which in turn licenses two Specifiers. This does not mean that these two heads are properly split, and can denote two discrete events. They

[195] Lipiński, 2001, p. 392
[196] Ibid., pp. 394-395
[197] These functions and most of the examples are drawn from Wright, 1896-98, pp. 32-34, Fischer, 2002, p. 99, and Gaudefroy-Demombynes & Blachère, 1937, pp. 54-55.

only augment the structure of the event, and we must assume an inner hierarchy of both Heads and Specifiers.[198] This might explain forms like *kātaba*, but an objection to Fassi Fehri's plurality explanation is that the other functions of the L-Stem do not articulate an associate agent. With verbs like *sāʿada* "to help someone" and *ẖāšana* "to treat someone harshly" the second participants are not agents at all.

A different approach would be to look at Næss' transitivity parameters in relation to the L-Stem. We see that the effort/attempt function takes an A that is [+VOL, +INST, -AFF], but the O is also [-AFF] as long as the action is not carried through. This is a sharp contrast to the [+AFF] of the factitive D-Stem. Further, the reciprocal is closely related to the associative, as the reciprocity is merely implicit in this *binyan*. The focus is rather on one participant engaged in a potentially reciprocal action. In this case the A is [+AFF]. The associative does not imply this parameter, and it seems almost prototypically transitive. Notwithstanding, the O is human, and although this distinction is poorly developed, it might be the case that this is a slight reduction from the easiest concept of a *Volitional human Instigating an action Affecting an inanimate object*. In any case, I think the most important aspect is the [+VOL, +INST] subject. This seems so far to be the core of the L-Stem. A controlling agent performs the action, regardless of what participant is affected. The function misleadingly called transitive in Table 59 is a mechanism to incorporate an E into the verbal core. It is quite similar to the other functions of the L-Stem in that it underlines action directed towards someone. The directed quality is basically the same thing, only with a state denoting a quality as its basis. There are some verbs that incorporate a cause(r) in the same way the factitive and causative does. This is not really incompatible with the human and controlling agent developed so far for the L-Stem. A particular function carried out by the L-Stem is to form a transitive counterpart with a controlling agent to certain tL-Stems. These are specifically concerned with separation or connection, e.g. *ʿādā bayna* "to bring about enmity between" from the tL-Stem verb *taʿādā* "to be enemies". Finally, there are some denominative L-Stem verbs. I think these notions choose the L-Stem to underline the application of an agent onto the nominal material.

To sum up the Arabic L-Stem, we can wee that it insists on an agent that is [+VOL, +INST] and mostly human. The Affectedness is irrelevant.

[198] Fassi Fehri, 2003, p. 162

4.2.4.6. The Arabic C-Stem

The Arabic C-Stem is formed by means of a /ʾa/-prefix which is not reflected in the prefix conjugation. This does, however take a particular form, *yuqtil*, and is not ambiguous. The functions found with this *binyan* are presented in Table 60:[199]

Causative	ʾağrā	to make run	ğarā	to run
	ʾākala	to feed, give to eat, make eat	ʾakala	to eat
Declarative-Estimative	ʾağbana	to think/find so. a coward	ğabuna	to be a coward
Denominative	ʾawraqa	to put out leaves	waraq	leaf
Responsive	ʾaṭlaba	to acquiesce to a demand	ṭalab	demand

Table 60

The main function of this *binyan* is the causative. It introduces a cause(r) as shown in Table 20 and this underlines the Instigation, preparing the ground for the denominative function seen with *ʾawraqa* above. This is simply an agent that is [-VOL, +INST], i.e. a force, applied to a noun. There are many nuances to denominatives, and this is true for all the *binyanim* in which they appear, but I will, as an example of this, more closely examine the denominative function of the Arabic C-Stem. Some variants are laid out in Table 61:

Direction/entering place	ʾaqbala	to advance	qabla	in front of
Entering time	ʾaṣbaḥa	to enter upon the time of morning, to do/become in the morning	ṣabāḥ	morning
Entering state	ʾaḫlaqa	to become worn out	ḫalaq	old
Acquiring quality/possession	ʾağmala	to have many camels	ğamal	camel
Privative	ʾaškā	to remove so.'s cause of complain	šakā	to complain

Table 61

Of special interest in a comparative perspective is the function of entering time, which appears in the Akkadian Š-Stem (4.2.1.5) and Amharic a-Stem (4.2.3.4) as well. Moreover we see that the Instigation of the agent is not consistently applied to these denominatives, e.g. *ʾaḫlaqa*.

Returning to Table 60 we find the declarative-estimative function, which appears surprisingly often with causatives although it seems rather to be an extension of the factitive. The responsive is not necessarily denominative, such as the corresponding *ṭalab* might imply, as well as the similar example of a privative. It can also be simply to use the action as a response, e.g. *ʾaṣraḫa* "to respond with a cry" from *ṣaraḫa* "to cry". The prominence of the causative function with the C-Stem should not simply lead us to explain away all other uses as denominatives, however. Andrzej Zaborski has

[199] These functions and most of the examples are drawn from Wright, 1896-98, pp. 34-36, Fischer, 2002, p. 99, and Gaudefroy-Demombynes & Blachère, 1937, pp. 55-58.

made a list of Arabic C-Stem verbs that are not causative,[200] and the list reveals that we can not posit a [+INST] agent as the unifying principle of this *binyan*, either, as there are many statives among them. This might have to do with the provenance of the C-Stem in Arabic. We know the /ʾa/-prefix from other forms as well, such as the elative and certain noun formations, e.g. *ʾaṣbaʿ* "finger". There might have been other entries into this *binyan* than through a causation.

All in all, we can say that the Arabic C-Stem is mostly causative, with related functions. It forms many denominatives, but there are also seemingly semantically unrelated verbs in this *binyan*.

4.2.4.7. The Arabic Gt-Stem

The Gt-Stem is the only infixing t-Stem in the Arabic system. It is employed for a gamut of functions that are summarized and presented in Table 62:[201]

Reflexive	iʿtaraḍa	to put os. in the way, oppose	ʿaraḍa	to place (sth) before one
Anticausative	iftaraqa	to go asunder	faraqa	to divide
Reciprocal	iltaqā	to meet one another	laqiya	to meet
Autobenefactive	iktasaba	to gain possession of	kasaba	to possess
	iltamasa	to feel about for a thing, seek for it	lamasa	to touch
Passive	iftaraqa	to be separated	faraqa	to separate
Intransitive	irtafaʿa	to rise	rafaʿa	to raise
Denominative	iḥtaǧǧa	to protest	ḥuǧǧa	proof

Table 62

All the functions of the Gt-Stem take an S or A that is [+AFF]. In the reflexive the A and O coalesce to become an S, the same is true for the reciprocal. This is not a very common function of the Arabic Gt-Stem, and some verbs, such as *iltaqā* above, may just as wee be used with a single A. The anticausative is a detransitivizing functions that suppresses the cause(r), leaving the affected entity as S. The autobenefactive blend the roles of agent and benefactor, and the passive suppresses the agent and promotes the patient to the most prominent syntactic position, making it an S. The intransitive is a cover term, and the example here is an anticausative. It is only meant to underline the valency reducing effect of this *binyan* by which pairs of transitive-intransitive verbs may arise that are not precisely fitted into the other function categories. There is a certain overlap with the N-Stem, which has a stronger focus on stativity, underlining the affected entity's entering into or staying in a state. The Gt-Stem marks reduced transitivity, but is not focused on the state of the affected entity. These two *binyanim* are nevertheless sufficiently close as to be resorted to when phonological

[200] Zaborski, 2007, pp. 32-38

[201] These functions and most of the examples are drawn from Wright, 1896-98, pp. 41-43, Fischer, 2002, p. 100, and Gaudefroy-Demombynes & Blachère, 1937, pp. 64-68.

restrictions are in play. The N-Stem generally does not accommodate roots with /ʾ/y/r/l/n/ as R_1,[202] and these use the Gt-Stem for all functions of the Gt- and N-Stems. Lastly, the denominative, which is not very prolific in th Gt-Stem, is exemplified here by *iḥtaǧǧa* "to protest", which Marie Baize-Robache relates to the noun *ḥuǧǧa* through the paraphrase "se faire une preuve de".[203] **The gist of the Gt-Stem is a reduction in transitivity, either by suppressing the agent/cause(r) or by conflating participants.**

4.2.4.8. The Arabic tD- and tL-Stems

The tD-Stem is the D-Stem with a prefixed /t/, and these are the functions reported for it:[204]

Reflexive	tanaṣṣar	to become a Christian	naṣṣar	to make so. Christian
Effective	taᶜallam	to become learned ≠ to have been taught	ᶜalim	to know
Anticausative	takassar	to break (intr.)	kassar	to break (tr.)
Affected Agent	takallam	to speak (a language)	kallam	to speak, talk (to so.)
Gradual progress	taḥassan	to become increasingly better	ḥassan	to improve
Simulative	taʾassaf	to present os. as sorry	ʾasif	to be sorry
Evasive	taḥannaṯ	to abstain from/avoid sin/crime	ḥaniṯ	sin

Table 63

The reflexive, effective and anticausative are valency-reducing. The latter four functions (affected agent, gradual progress, simulative and evasive), however, do not affect the valency of the verbs in question, but they all reduce semantic transitivity.

The reflexive merges the A and O in a single S, and what could otherwise have been a formally transitive verb can no longer distinguish the participants. The effective is perhaps not a category at all. It depends on whether we distinguish between unambiguously doing something to oneself (reflexive) and more vaguely having something done, or letting something be done to oneself, perhaps even not excluding some effort on part of the (agent-)patient. The ambiguity arises from the interpretation of the corresponding D-Stem. Seeing as I have interpreted the D-Stem as factitive, and the introduced cause(r) here I suppressed, this might be called an antifactitive, to coin a term that parallels the anticausative, or simply a passive. The anticausative does not merge arguments, as it might sometimes appear. It suppresses the agent while not excluding that it exists.

As for the valency-preserving alternations, we find that they reduce the transitivity of the events they denote. The affected agent reading of *takallam* "to speak" is based on the observation

[202] Haywood & Nahmad, 1965, p. 176
[203] Baize-Robache, 2011, p. 428
[204] These functions and most of the examples are drawn from Wright, 1896-98, pp. 36-38, Fischer, 2002, p. 99, and Gaudefroy-Demombynes & Blachère, 1937, pp. 58-61.

that the language that may serve as the object is not really affected by the action. It is either the agent or nothing at all that is affected. With the last three functions I have reported intransitive examples above, but the parameters of transitivity are relevant nonetheless. The gradual progress denotes an inner partition of the event, and this makes it less complete in the same way that imperfective aspect makes verbs less transitive by focusing on the inner composition of the event. If something can become "gradually better", it follows that it may at a given time have become "somewhat better, but with the potential of becoming better still". This is also similar to the frustrative described by Næss. She shows that if an action is attempted but frustrated the object will be [-AFF], and the same can be done at clause level by means of negation that switches the objects affectedness from + to -.

With the simulative the action is also attenuated in the sense that "it is not really true". If someone feigns something we could say that the agent is [-VOL, +INST], not in the sense that the agent is involuntarily doing something, but rather expressing that he has no intention of carrying out the action "for real". One could argue that someone pretending to be sorry has a very clear intention of doing exactly that, but when the verb in question seems to stand in some relation to the verb denoting the action itself, it becomes clear that the "being sorry" in this case is not carried out. An alternative explanation is that this is a reflexive of the corresponding D-Stem declarative. One declares oneself to be sick, for instance. I find this explanation less suitable with notions such as "act foolishly" etc. Finally, the evasive is a more straightforward reduction of transitivity in that the action is definitely not carried out. This has exactly the same effect as negation which switches the features at clause-level.

The tD-Stem is a *binyan* that marks reduced transitivity, even if a verb from which it is derived is very low in transitivity in the first place. If a root is only cast in the tD-Stem, or this stem denotes what is arguably its semantically most basic form, this is a consequence of an extension of its features from derivation to an accommodating stem allowing events that are seen as not affecting anyone, or at least not an object. **In short, the O of a tD-Stem either merges with the A, is [AFF-], or non-existing, or the action is not completely carried through.**

Moving on to the tL-Stem, the functions reported in the literature for this *binyan* are summarized in Table 64:[205]

[205] These functions and most of the examples are drawn from Wright, 1896-98, pp. 38-40, Fischer, 2002, pp. 99-100, and Gaudefroy-Demombynes & Blachère, 1937, pp. 61-63.

Reciprocal	taᶜānaqa	to embrace each other	ᶜānaqa	to embrace
Internal reciprocal	tamāsaka	to be of compact and firm build	masaka	to cling, adhere to
Gradual progress	taḍāʾala	to become smaller	ḍaʾula	to decrease, diminish
Successive	tatābaᶜa	to follow one after the other	tabiᶜa	to follow
Simulative	taǧāhala	to pretend not to know	ǧahila	to be ignorant
Reflexive-Causative	taᶜālā	to make os. high	ᶜalā	to be high

Table 64

The reciprocal is the most common function of the tL-Stem. It builds on the notion of "directing action towards another" present in the L-Stem, and the /t/ is a detransitivizers that conflates the agents-patients in one role. The so-called internal reciprocal is rather a reflexive. The A and O are merged, and in the case of *tamāsaka* we see a somewhat developed meaning based on the concept. The gradual progress is the same functions as with the tD-Stem. The action is ascribed inner complexity and the possibility of partial [+AFF] is brought to the forefront and made the aspect that distinguishes the verb from the corresponding G-Stem in this case. The successive is an instance of reduced transitivity where the distinguishability of the participants is reduced as it almost resembles a reciprocal. The simulative in the tL-Stem is just the same function as the simulative in the tD-Stem described above. The reflexive-causative seems to be a reflexive reduction in transitivity based on the equiradical C-Stem. The function is more common with the st-Stem in Arabic, and this is a case of overlapping functions. **The Arabic tL-Stem reduces transitivity, mostly by reducing the distinguishability of the participants.**

4.2.4.9. The Arabic st-Stem

The Arabic st-Stem might, as mentioned earlier, be a t-Stem counterpart to the C-Stem. The prefixes might even be related if the /ʾ/ is regarded as a development from a sibilant which is preserved in the environment of a /t/, but the lack of marking in the C-Stem prefix conjugation is conspicuous. In any case, these are the functions retrievable for the Arabic st-Stem:[206]

Reflexive-causative	istaᶜadda	to get oneself ready	ʾaᶜadda	to prepare
Autobenefactive-causative	istaḥyā	to preserve alive for one's own advantage	ʾaḥyā	to bring to life, preserve alive
Estimative	istaḥalla	to think sth lawful (for os.)	ḥalla	to be lawful
Curative	istaġfara	to ask for pardon	ġafara	to pardon
Assimilative	istanāqa	to become like a she-camel	nāqa	she-camel
Denominative	istaqḍā	to appoint os. as a judge	qāḍin	judge

Table 65

[206] These functions and most of the examples are drawn from Wright, 1896-98, p. 44, Fischer, 2002, p. 100, and Gaudefroy-Demombynes & Blachère, 1937, pp. 69-71.

The reflexive-causative and the autobenefactive causative are instances of blending the agent with the patient or the benefactor respectively. These functions direct the action back towards the cause(r) and the result is reduced transitivity and valency reduction. The estimative is a factitive, and in this case the fact that estimation only really affects the one who makes it, and not the one about which it is made, is given prominence as the reflexive-causative st-Stem is used to express it. The curative is a common function of this *binyan*, and it incorporates requests, implorations, beseeches, and demands. Contrasting the reflexive-causative, the curative does not conflate causer and causee. One makes someone else do the action that is supposed to be for one's benefit. In this regard it is closer to the autobenefactive-causative. The assimilative is a particular function of the Arabic st-Stem. It is not the same as the simulative, which is a reflexive-declarative or exhibiting divergent Volition. It is rather involuntarily and unconsciously (when used with a human S) becoming like the nominal base from which it is derived, e.g. *istaḏʾaba* "to be fierce or cruel like a wolf" from *ḏiʾb* "wolf". The basis for this function seems to be the reflexive-causative. One makes oneself be in the state defined by the noun, and Volition is not a relevant parameter. Other denominatives in the st-Stem behave similarly, such as *istaqḍā* above. **To sum this up, the Arabic st-Stem is a causative with lowered transitivity. There is always Affectedness with the A or S.**

4.2.4.10. The Arabic R-Stem

The Arabic R-Stems are few, and have very limited functions. A few examples are given in Table 66:[207]

Adjectival	iṣfarra	to be yellow	ʾaṣfar	yellow
	iʿwağğa	to be crooked	ʾaʿwağ	crooked
	irqadda	to run quickly	-	-

Table 66

We see that there really is only the stative expression of a quality, which is almost exclusively a color or a bodily defect, to be found with th R-Stem. The corresponding adjectives are of the *ʾafʿal*-pattern. Parallel rare forms appear with similar adjectives in Biblical Hebrew, e.g. *raʿănn̄an* "to grow luxuriant, fresh, green", and Gəʿəz has a similar derivation in which the entire final syllable is reduplicated, e.g. *ʾaqyaḥyaḥa* "to gleam red". **The Arabic R-Stem is a stative verbal predicate for a particular group of adjectives.**

4.2.4.11. Other Arabic Stems

The grammars of the classical language report five rare stems for triradicals in addition to those examined so far. These are shown in Table 67:

[207] These functions and most of the examples are drawn from Wright, 1896-98, pp. 43-44, Fischer, 2002, p. 100, and Gaudefroy-Demombynes & Blachère, 1937, pp. 68-69.

Form XI	iswādda	to be black	ʾaswad	black
Form XII	iʿrawrā	to mount a camel without saddle	ʿariya	to be naked
Form XIII	iʿlawwada	to be strong	ʿalida	to be firm, strong
Form XIV	iḥlankaka	to be pitch-black	ḥalika	to be pitch-black
Form XV	iġlantā	to assail violently	taġallata	to take in a state of inadvertance

Table 67

These *binyanim* are so rare that they should not be counted as part of the system at all. There are several groups of quadriradical verbs in which one of the radicals appear to be added to a triradical root, and these are better candidates for expanding the *binyanic* categories than the isolated and fossilized verbal forms demonstrated in Table 67.

4.2.5. Cairene Arabic

No overview of the *binyan* system as it has developed and varies throughout the Arabic dialects will be presented here, but I include a short overview of the system as it is found in Cairene Arabic in order to contrast at least one of the great many spoken variations with the Classical Arabic system and MSA. The presentation here is based on Manfred Woidich's "Das Kairenisch-Arabische" which in its lucid explanations and utter thoroughness surely will serve as a new benchmark in Arabic dialectology.

4.2.5.1. The morphology of the Cairene Arabic system

The *binyan* system of Cairene Arabic is made up of G-, D-, and L-Stems that can in turn be prefixed by t- or ista-, resulting in nine slots:[208]

G-Stem	**tG-Stem**	**stG-Stem**
D-Stem	**tD-Stem**	**stD-Stem**
L-Stem	**tL-Stem**	**stL-Stem**

Table 68

In addition, an N-Stem can be found, but Woidich indicates that this stem was more frequently found in the past and is no longer productive.[209] The tG-, stD-, and stL-Stems are also quite rare. Finally, an R-Stem, corresponding to the standard system's FIX exists. It only forms stative or ingressive predicates corresponding to adjectives, so I will not expand on this *binyan* beyond an example: *iṣlaʿʿ* "to become bald" < *ʾaṣlaʿ* "bald". The G-, D-, and L-Stems are not lexical, and a root can appear in two of them or all three. Nevertheless, the similarities with the Gəʿəz system are striking. T-Stems

[208] Woidich, 2006, pp. 66-74
[209] Ibid., p. 67

are found in many constellations in many languages, but the /ist-/ prefix on other than the basic stem, and the basic makeup of G-, D-, and L-Stems are perfect parallels in these two languages.[210]

4.2.5.2. The Cairene Arabic G-Stem

The Cairene Arabic G-Stem appears in seven vowel classes:[211]

Vowel class	Example		
a-i	katab	yiktib	to write
a-u	xaṛag	yuxrug	to go out
a-a	ḍarab	yiḍrab	to hit
i-a	birid	yibrad	to be(come) cold
u-a	ṣuġur	yiṣġaṛ	to be(come) small
i-i	nizil	yinzil	to descend
i-u	sikit	yiskut	to be(come) silent

Table 69

The a-i-Class may be exploited to express causativity, and Woidich suspects this to be an inheritance of a form similar to the MSA FIV with the prefixed /a-/ moved into the radical skeleton to form the suffix conjugation, and the characteristic /i/ appearing as expected after R_2 in the prefix conjugation, e.g. *xaṛag* – *yuxrug* "to go out" and *xaṛag* – *yixrig* "to take outside". There seems to be a general distinction, albeit with some obvious exceptions, between the first three classes with suffix conjugations in /a/ and the last four in /i/u/ with the former being more often syntactically transitive, or at least unergative, and the latter being syntactically intransitive, unaccusative and in many cases stative. The a-a-Class is employed for phonological reasons accommodating roots with gutturals/laryngeals/pharyngeal and emphatic consonants as R_2 or R_3. The i-a- and u-a-Classes are used with low transitivity verbs, mainly statives, but also incorporating syntactically transitive verbs that take an affected entity as their A, viz. experience verbs (*simiᶜ* "to hear") and verbs with an affected agent (*širib* "to drink"). A factitive counterpart to i-a-verbs can be formed by the a-i-Class as for instance with *tiᶜib-yitᶜab* "to be tired" > *taᶜab-yitᶜib* "to tire, make tired". The i-i-Class shows an array of functions, and although they do not seem to be reducible to a single phonological, syntactic, or semantic restriction, we can identify at least two groups among them,[212] i.e. movement verbs (*miši* "to walk") and reflexive/autobenefactive verbs (*libis* "to dress"). Finally, the i-u-Class comprises stative verbs.

4.2.5.3. The Cairene Arabic D- and L-Stems

The Cairene Arabic D-Stem is formed with a double R_2, and two vowel classes are distinguished by the vowel following the double consonant, viz. an a-a-Class and an i-i-Class. These are phonologically

[210] Cf. 4.2.2.1 above.
[211] Woidich, 2006
[212] Cf. Kouwenberg's theory on the genesis of vowel classes in the Akkadian G-Stem under 4.2.1.2 above.

determined. The former is used in the environment of back consonants (postvelar, uvular, pharyngeal, laryngeal, emphatic (pharyngealized)) except /h/, the latter in all other contexts.[213] The functions of the D-Stem reported by Woidich are presented in Table 70:[214]

Factitive	sakkit	to silence	sikit	to be silent
Intensive	xabbaṭ	to knock violently	xabaṭ	to hit, knock
Pluralic	kassaṛ	to break in many pieces	kasaṛ	to break
Delocutive-estimative	gahhil	to accuse of being ignorant	gahl	ignorant
Dephrasal	kaḅḅaṛ	to say 'God is great'	aḷḷāhu akbaṛ	God is great
Denominative	šaḥḥam	to grease	šaḥm	fat
Directional	šaṛṛaˀ	to go eastward	šarˀ	east
Intransitive	ˀaṛṛab	to come/bring near	ˀurub/ˀirib	to become near
	nammiš	to become freckled	namaš	freckles (coll.)
Impersonal	iddinya šattit	it has become winter (lit. the world has become wintery)	šita	winter

Table 70

Woidich calls the first category mentioned "Kausativ", but a closer look at the examples gathered both by him and by Wilhelm Spitta-Bey over a century earlier point to a factitive function.[215] The intensive and pluralic functions are extensions of the factitive in as much as compared to the causative that could be interrupted or unintentionally affect a different entity the factitive focuses on the effect of the action as it has been carried through, and it is therefore easily seen as more thorough, forceful, or able to affect more objects without that being a reduction of transitivity due to a less individuated and hence inherently partially affected plural object. The delocutive and estimative functions place the affected entity in the new state simply by means of the pronunciation or mental estimation of the verbal notion in question. The dephrasal and denominative functions are closely related in that they apply volition and instigation on a phrase or noun, and this produces applicative, effective, or privative verbs. The same can be said of the directional function. Volition and instigation applied to a direction produces a movement verb. It should be mentioned at this point that the D-Stem is the main vehicle for incorporating borrowed verbs in Cairene Arabic. An illustrating example is found in *ikkumbiyūtaṛ biyhannig* "the computer is hanging (> √hng)".[216]

So far the Cairene Arabic D-Stem has shown increased transitivity in all cases, but the intransitive function, vaguely named in accordance with the seemingly only common characteristic of

[213] Woidich, 2006, p. 67
[214] Ibid., pp. 72-73
[215] Spitta-Bey, 1880, pp. 210-212
[216] Woidich, 2006, p. 110

its manifestations, syntactic intransitivity, breaks the pattern. I think we should take the participle into account when assessing this usage of the D-Stem, because when the distinction between its active and a passive form is leveled outside the G-Stem[217] we end up with a nominal verb form that in certain respects behave like the Akkadian verbal adjective. The participle of the D-Stem, for instance, can denote an agent or a patient, e.g. *mezahhib* "gilder" or *melabbis* "dressed", and this ambiguity might be a background for the focus on affectedness that seems to be even stronger with the Cairene Arabic D-Stem than in the other languages discussed so far. The factitive is read as "making someone/something be _ed", and we will see in the discussion of Hebrew 4.2.6.4 below that this has made [+VOL] a restriction on A used with D-Stems, but in Cairene Arabic it seems the [+AFF] parameter on the affected entity, that is the essence of a factitive, has overridden the factors increasing transitivity, and there is no need for an agentive subject. "Making someone/something _ed" and "becoming _ed" are both valid readings of the intransitive verbs in the D-Stem, and I believe this strengthens the argument for a factitive function at the core of the D-Stem. It is harder to see how a causative could have developed in this direction. Finally, the impersonal constructions taking *iddinya "*the world" as a dummy subject carry on the intransitive affected function.

To summarize, **the Cairene Arabic D-Stem focuses on the affected entity entering its new state, and in most cases this means clearly distinguishing two participants, one of them being the volitional instigating agent that places the affected patient in its resulting state, but the patient "becoming _ed" is given priority.**

The functions of the L-Stem are less clearly discernible. Woidich reports that the action is often directed towards a person mirroring the functions *associative* and *directed quality*, described for the MSA FIII in 4.2.4.4 above, e.g. *sāʿid* "to help so." and *kārim* "to be generous with someone".

4.2.5.4. The Cairene Arabic t-Stems

The t-Stems mark reduced transitivity, and they are therefore used as reflexive and passive forms of the G-, D- and L-Stems. The semantically reduced transitivity does not always mean syntactic intransitivity, at least not with the tD-Stem. Woidich gives the example *iggawwizit-u* "she married him".[218] The action can be seen as autobenefactive, or perhaps inherently reciprocal, but in any case there is a very low distinction of participants. In 0 it was discussed how less individuated objects reduce transitivity. They can be poorly distinguished from the subject, but they can also be poorly distinguished from the general background. This also holds for subjects, and the Cairene Arabic t-Stems exemplify this when being used to convey impersonal clauses: *lāzim yitmazziklu ʿašān yinām* "one must play him some music so that he falls asleep".[219] The tL-Stem is often used as a reciprocal,

[217] Woidich, 2006, p. 83
[218] Ibid., p. 74
[219] Ibid., p. 74

and it can in some cases be simulative, e.g. *itgāhil* "to ignore each other" and *itmāriḍ* "to feign illness".

To the extent that the tG- and N-Stems both form passives the former avoids roots with R_1 = /t/d/ṭ/ḍ/, and the latter roots with R_1 = /ʾ/r/l/n/ and to a certain extent /m/.[220] Retsö indicates that the tG-Stem passives carries (or carried) lower prestige than the N-Stem passives, and taken together with Woidich's assessment of the situation for N-Stems today this seems to indicate that the tG-Stem as a passive marker originated in adjacent dialects and entered Cairene Arabic in a marginal position, and later grew to dominate the passive formation from the G-Stem.[221]

4.2.5.5. The Cairene Arabic st-Stems

These functions are reported for the Cairene Arabic st-Stems:[222]

Estimative	istaḥsin	to regard as better	ḥasan	good
Curative	istaʾzin	to ask permission	ʾizn	permission
	istabārik	to seek a blessing	baraka	blessing
Simulative	istamwit	to play dead	mayyit	dead
Reflexive/middle	istiʾakkid	to convince oneself	ʾakīd	certain
	istiʾāmin	to feel safe, secure	ʾamn	safety

Table 71

The estimative function of the st-Stems is not linked to the delocutive, as is the case with the estimative D-Stems. Here, I suspect we are dealing with a factitive-reflexive so that the point is the subjective assessment that is made. All the functions are directed back towards the initiator, whether it is a subjective assessment, an autobenefactive request, a particular presentation of oneself, or a reflexive action. The stD- and stL-Stems are not as frequent as the stG-Stems.

4.2.6. Hebrew

4.2.6.1. The morphology and history of the Hebrew system

An obvious challenge in dealing with Hebrew is the long span and great variation of language use involved, and the significant developments within the *binyan* system throughout the three millennia of use and disuse of the language. I will describe the systems of Biblical Hebrew (BH), Mishnaic Hebrew (MH), and (Modern) Israeli Hebrew (IH). The former two varieties are defined by corpora, and the latter is taken to represent contemporary Israeli usage. Much holds throughout the three stages under investigation here, and I will describe the *binyanim* as relating to one system. The departure point is BH and the developments and special usages in MH and IH will be indicated at the end of the discussion of each *binyan*. This is not methodologically strict, but I believe important features of the *binyan* system may be revealed in any case, also respecting the limits of this thesis.

[220] Retsö, 1983, p. 88
[221] Ibid., p. 90
[222] Woidich, 2006, p. 74

The Hebrew binyanim system is often described as a seven-way categorization comprising the following *binyanim*:

Stem	Designation
G-Stem	Qal/Paal
N-Stem	Nifal
D-Stem	Piel
	Pual
C-Stem (h)	Hifil
	Hufal/Hofal
tD-Stem	Hitpael

Table 72

These appear in all three stages we discuss here (BH, MH, IH), but they are not the only morphological realizations of roots as verbal predicates that are found. A famous and much discussed verb in BH is *hištaḥwā* "to bow down, prostrate oneself" which is now thought to be a št-Stem (with √ḥwy), in MH an NtD-Stem, Nitpael, is a productive central stem in the system, and in IH we find remnants of many of the older stages of language as well as new *binyanic* formations such as Hitpual.

If we first go back to BH and take a closer look at the various forms appearing we find a bewildering array of patterns. A summary of the combinations of affixes and consonantal configuration can be seen in Table 73:[223]

BH	-	ʾV-	hV-	nV-	tV-	ʾVt-	hVt-	nVt-	hVšt-
$C_1(V)C_2VC_3$	Qal	Ifal	Hifil	Nifal	Tifal		Hitpael	Nitpaal	Hištafal
	Passive Qal		Hufal/Hofal	Nufal			Hutpael		
$C_1oC_2VC_3$	Poel			Nipoel		Itpoel	Hitpoel		
	Poal			Nupoal					
$C_1VC_2C_2VC_3$	Piel			Nipael	Tipael	Itpaal	Hitpael		
	Pual			Nupael			Hutpaal		
$C_1VC_2C_3VC_3$	Palel			Nipalel			Hitpalel		
	Pulal								
$C_1VC_2C_1VC_2$	Pilpel						Hitpalpal		
	Pulpal								
$C_1VC_2VC_3C_2VC_3$	Pealal						Hitpealal		
	Pualal								

Table 73

Most of these *binyanim* appear with less than five, and often only one, root, and I will not spend an equal amount of time on each of them. The importance of Table 73 is rather to point out the morphological material in play, however marginally, in the BH system.

[223] Adapted from Verheij, 2000, p. 31. Here the /ʾ/ and /ʿ/ are represented to provide a more precise representation of how the root is fitted into the patterns. Vowel length is not indicated.

4.2.6.2. The Hebrew G-Stem

The Hebrew G-Stem (Qal) can form verbs of any semantic shading, perhaps to the exclusion of factitives paraphrased "making X _ed", and passives. The stem shows six different vowel classes in BH, summarized in Table 74:[224]

Vowel class	Example		
a-ō	kā̱ṯaḇ	yiḵtōḇ	to write
a-ē	nā̱ṯan	yittēn	to give
a-a	lā̱maḏ	tlimaḏ	to learn
ē-ō	ḥā̱pēṣ	yiḥpōṣ	to delight in
ē-a	zā̱qēn	yizqan	to be old
ō-a	qā̱ṭōn	yiqṭan	to be small

Table 74

The a-ō-Class is the most common, incorporating mostly fientive, active-transitive verbs. The a-ē-Class is used for I-n and I-y verbs. The a-a-Class shows both II- and III-guttural verbs and stative verbs on sound roots. Some fientive verbs also appear, and they are described as either developed from earlier statives, or not really explainable.[225] The latter group seems to be verbs of very low transitivity, e.g. *lā̱maḏ* "to learn" and *rā̱ḇaṣ* "to lie stretched out". The ē-ō-Class is mixed in the sense that the suffix conjugation is the stative *qā̱ṭēl* while the prefix conjugation is an intruding *yiqṭōl* from the a-ō-Class. A majority of the verbs appearing in this class have a bilabial or velar (/b/p/n/h/g/k/q/) as R_2 or R_3, and it is claimed that the presence of these sounds may have rounded the vowel in the prefix conjugation,[226] but I am not really confident that a sixty percent chance of one of seven phonemes (out of a total 23) appearing in one of two radical positions (out of three) is statistically significant. The ē-a-Class contain stative verbs, both syntactically intransitive and transitive, e.g. *zā̱qēn* "to be old" and *śā̱nē(ʾ)* "to hate so./sth."[227] Finally, the ō-a-Class is also stative, comprising only a few verbs.

We should note that the Hebrew G-Stem in its Biblical manifestation is ascribed a denominative function. This is typically the domain of the D-Stem, and in later times I think almost exclusively so. The verb formed is an application, manipulation or interaction of some sort with the noun, or it can be an stative/ingressive. An example of each function would be *ʾṓhɛl* "tent" > *ʾā̱hal* "to tent" and *mɛ́lɛḵ* "king" > *mā̱laḵ* "to be(come) a king".

4.2.6.3. The Hebrew N-Stem

The Hebrew N-Stem (Nifal) is marked by a prefixed /n-/ in the suffix conjugation and the participle. In the prefix conjugation it takes a double(/plosive) R_1, and an additional a prefixed /h-/ in the

[224] Adapted from Edzard, 2011, p. 499
[225] Waltke & O'Connor, 1990, p. 370
[226] Ibid., p. 370
[227] Ibid., p. 368

imperative and infinitive. Most grammars describe the N-Stem as an original reflexive that has increasingly taken on a passive meaning,[228] possibly in tandem with the disappearance of a passive Ablaut G-Stem. This would in that case follow a well established pattern of grammatical shifting.[229] We will in any case draw on the lists of functions provided in the various grammar, and examine them in terms of transitivity, syntactic prominence and focus. This is a summary of the Nifal's functions as reported in the literature:[230]

Middle	nišbar	to break (intr.)	šā̱bar	to break sth.
	nišʾal	to ask sth. for os.	šāʾal	to ask
Reflexive	nistar	to hide os.	sā̱tar	to hide
Reciprocal	nišpaṭ	to enter into controversy with each other, to go to law with one another	šā̱paṭ	to judge
Passive	niḇqaᶜ	to be divided	bā̱qaᶜ	to divide
Simple adjectival/Stative	niṗtaḥ	to be open	pā̱taḥ	to open
Ingressive-stative	niḫhal	to become terrified	-	-
Potential[231]	nɛʾĕḵal	to be edible	ʾā̱ḵal	to eat
Tolerative	nimṣā̱(ʾ)	to let os. be found	mā̱ṣā̱(ʾ)	to find
Intransitive	nimlaṭ	to fly	-	-
Denominative	nɛʾĕlam	to be(come) mute	ʾillem	mute
	nōsaḏ	to consult secretly	sōḏ	secret (council)

Waltke and O'Connor chose to employ the term *middle*.[232] As we have seen, this category is rarely precisely defined, but it always points back to the Greek middle voice. This would be something that is directed towards or benefits the subject or its interests. The first example above, and two other reported under the same heading by Waltke and O'Connor, are in fact anticausative. The subject is in any respect the affected entity, and the autobenefactive variant of the middle is clearer in the second example. The affectedness of the subject also holds for the reflexive, reciprocal and the passive, the latter being in part defined by raising the affected participant and casting it as subject. Both agentless passives and constructions with agent extensions occur with the Nifal.

The adjectival functions (simple, ingressive-stative, and gerundive) are very similar. They all take the affected participant as their subject, and the simple adjectival and the agentless passive seem indistinguishable. There might be a resultative aspect to some of these verbs, but as seen

[228] Gesenius, 1910, p. 138
[229] Cf. the grammaticization of passive morphology in Haspelmath, 1990, pp. 42-46.
[230] This is drawn from Waltke & O'Connor, 1990, pp. 378-395, Gesenius, 1910, pp. 137-139, Nyberg, 1952, pp. 218-220, Joüon & Muraoka, 2008, pp. 139-140
[231] Waltke and O'Connor call this function a gerundive, and they apply this term from Latin grammar in order to capture the cases where the adjectival state is expressed as necessary, proper, or possible. Cf. Waltke & O'Connor, 1990, p. 387 and also Nyberg, 1952, p. 219.
[232] Waltke & O'Connor, 1990, p. 381

above (2.4.4) “Passivization entails predicative stativization. This gives rise to an affinity of passives with perfective-resultative perspectives on verbs.”[233] There is really no basis on which to argue a clear-cut distinction of instances of for example *niṗtaḥ* as either “to be opened” or “to be open”. The ingressive-stative and the gerundive are less transitive as they denote the entering into a state, which may be gradual, and potentiality which is not actual. There is no shift in focus, however. The constructions still cast the affectedness (actual, partly, or potential) of the subject as the main feature.

The tolerative is related to the passive. The Volition of the S may not be specified, and in that case there is no difference between these two functions. The intransitive, especially occurring with verbs of movement,[234] can also be seen as marking affectedness on the S. It makes no difference whether the verb is unergative (*nimlaṭ* “to fly”) or unaccusatives (*nirdam* “to fall asleep”). The latter category is often taken to include emittance verbs as well (*nɛʾĕnaḥ* “to sigh”), and this is not at all strange as we saw in Table 7 that experiencers, emitters, and recipients/addressees share configuration. An emitter is in fact a form of affected entity. Some verbs even show mixed paradigms, e.g. √mwg “to oscilliate, waver” that appears as Nifal in the suffix conjugation and participle, and Qal in the prefix conjugation.[235] Finally, the Nifal can form verbs from adjectives or nouns. The former are generally cast as stative verbal predicates, while the latter give rise to statives, reflexives/middles, and reciprocals. An Ablaut passive of the Nifal may be seen in Isaiah 59:3 and Lamentations 4:14 *nəgoʾălû* “they were stained”, but the interpretation is uncertain and it might be a residue to an L-Stem. Finally, the N-Stem has the same functions in MH and IH, but in the latter it is only semi-productive.[236]

To summarize, the Nifal forms and derives predicates with an S as [+AFF]. It may therefore accommodate all instances where the participant given syntactic prominence (as S) is the affected entity, or the more affected entity. Volition and Instigation are neutralized parameters with the Nifal as the most prominent syntactic participant may allow the action, perform it on himself or just be subjected to it.

4.2.6.4. The Hebrew D-Stem

The Hebrew D-Stem (Piel) is marked by a double R_2, and takes /ə/ with the personal prefixes in the prefix conjugation. There are 415 verbs appearing in the D-Stem in BH, and this is a summary of their functions:[237]

[233] Abraham, 2006, p. 2
[234] Nyberg, 1952, p. 219
[235] Ibid., p. 219
[236] Glinert, 1989, pp. 464-465
[237] This is drawn from Waltke & O'Connor, 1990, pp. 396-417, Gesenius, 1910, pp. 141-142, Nyberg, 1952, pp. 220-223, Joüon & Muraoka, 2008, pp. 143-145

Factitive	biššel	to cook (sth.)	bā̆šal	to cook (intr.)
Causative	limmeḏ	to teach	lā̆maḏ	to learn
Delocutive	niqqā̆(h)	to declare innocent	nā̆qī	innocent
Estimative	ṣiddeq	to regard as righteous	ṣā̆ḏaq	to be righteous
Intensive	šibber	to shatter	šā̆ḇar	to break
Pluralic	qibber	to bury (many)	qā̆ḇar	to bury (one)
Metaphorical	sipper	to tell a story	sā̆p̄ar	to count
Basic	giddep̄	to curse	-	-
Denominative	zinneḇ	to injure the tail, attack the rear	zā̆nā̆ḇ	tail

Table 75

Among the many attempts to classify the various functions of the Hebrew D-Stem and explain how they are interconnected in order to establish some semblance of isomorphism, we can distinguish to major trends. The first is the strain of intensive-based explanations that have tried to derive all instances of D-Stem from a core meaning of *intensity*. This is a common idea within Semitic studies,[238] but it has been criticized for a long time. As mentioned in 2.4.5, Albrecht Goetze, in his concise article "The So-Called Intensive of the Semitic Languages", rejects this approach harshly:

> *In the last analysis, this assumption rests on the romantic notion that the doubling of the middle radical which characterizes the piᶜel over against the qal, i.e. its intensification, symbolizes a corresponding intensification in the force of the form.*[239]

The idea nevertheless surfaces repeatedly in grammars on the Semitic languages.[240] The second trend is to focus the explanations on the factitive function, and this strain is built on Goetze's insight and best developed by Ernst Jenni. Waltke and O'Connor also to a certain extent uphold this newer tradition.

Turning to the material in Table 75, I will apply Jenni's theory and see that it leads us closer to understanding the D-Stem. Drawing on the work done in Assyriology, Jenni wanted to relate the D-Stem to an adjectival counterpart of the Akkadian stative conjugation, so that the D-Stem could be said to be factitive, inducing the state described by this adjective.[241]

With unaccusative verbs the D-Stem denotes action that prompts the state or result state of an activity with the inner argument of such verbs, and with unergative verbs the factitive brings about the resulting state that the external argument finds itself in after having performed the action.

[238] See for instance Gesenius, 1910, p. 141.
[239] Goetze, 1942, p. 2
[240] Certain suspicious and cautious remarks often accompany intensive-based explanations as the notion clearly does not fit all the material at hand. A case in point is Hans Bauer and Pontus Leander's closing comment in their treatment of the D-Stem: "Die Frage, wie die semitischen Intensiva causative Bedeutung angenommen haben, ist also vorläufig nicht zu beantworten." Bauer & Leander, 1922, p. 293.
[241] Jenni, 1968, pp. 12-15

This latter function is often confusingly called causative, as reflected in the summary Table 75, but that is not Jenni's usage of the term, as explained by Waltke and O'Connor:

> *The Piel is associated with causation: the Piel causes a state rather than an action (as the Hiphil, for which we reserve the term causative, does.*[242]

The delocutive, as we have seen, is a factitive variant in that the pronouncement in itself makes the affected entity be in the resulting state, the same is true of the closely related estimative function. The intensive, rather than being the semantic prototype of the D-Stem, is an extension and reinforcement of the factitive focus on the [+AFF] parameter of the causee. This means that a verb can be cast in the D-Stem without automatically incurring a new participant, a cause(r). In the example above we see *breaking* becoming *shattering*, and it is the Affectedness of the O that is increased, not necessarily the Instigation of the A. There is also a question of whether the English counterparts really reveal the factitive distinction. There are, however, some English verbs that show factitive counterpart constructions, e.g. *I cut the cake. - I cut up the cake.* The former is focuses on the activity or its Instigation, but the latter focuses on the result, and is a factitive. This kind of semantics may be at play in the pair *šā̱bar – šibber* as well, and a more precise paraphrase for *šibber* would be "to make broken".[243] Furthermore, the pluralic is a different distribution of the Affectedness focus. Instead of the one O being more affected the influence is spread on a plural O.

The metaphorical use of the D-Stem is less obviously factitive, and it might just be a morphological diversification of the meanings. Jenni, however, sees the metaphorical as an extension of the factitive where getting the affected entity into the new state is still the core of the function, and the less direct and actual involvement of the cause(r) is a defocusing that goes perfectly with the factitive.[244] Consider the pair *nā̱haḡ* "to herd" – *nihaḡ* "to herd (God of his people)", where the A of the second verb is less directly involved, while the affected entity still "is herded". The basic verbs in this *binyan* are already factitive, and we have seen that the factitive *binyan* is also a logical entry point for denominatives.

Finally, I think one of the most interesting discoveries of Jenni is the existence of verb pairs in the G- and D-Stems where only or mostly the former can take negation. This demonstrates the interrelatedness of the parameters underlying the *binyan* system and the parameters affecting and being affected by other elements in the verbal clause. An example is the pair *ḥā̱laq – ḥilleq* "to divide" of which only the G-Stem appears negated, and stands in a negative-positive relationship to

[242] Waltke & O'Connor, 1990, p. 400
[243] Jenni, 1968, p. 141
[244] Ibid., pp. 135-140

the D-Stem on such occasions.[245] There are no major developments in the D-Stem in MH and IH. In the latter it is very productive as a denominative,[246] perhaps not always due to the factitive function, but as a structure that easily accommodates any root, e.g. *simmes* "to send an SMS".

To sum up, the Hebrew D-Stem is factitive and may also serve to express related functions where the main focus is on the affected entity entering a state. This may lead to valency increase, as a new participant (the cause) is introduced, but some functions disregard this as the stronger focus is on the Affectedness.

4.2.6.5. The Hebrew C-Stem

The Hebrew C-Stem (Hifil) is marked by a prefixed /hi-/, giving *hiqtīl*, in the suffix conjugation and the form *yaqtīl* in the prefix conjugation. Its functions, as reported in the literature, are given in Table 76:[247]

Causative	limmeḏ	to teach	lå̄maḏ	to learn
Ingressive	hiḇʾīš	to become putrid	bå̄ʾaš	to rot, putrefy
Declarative-estimative	hiršīaᶜ	to declare so. ungodly	rå̄šå̄ᶜ	ungodly
Concessive	hišʾīl	to agree to a request	šå̄ʾal	to ask
Mode of action	hiskīl	to act foolishly	så̄ḵå̄l	fool
Denominative	hišrīš	to take root	šórɛš	root
Basic	hiḇdīl	to separate	-	-
Pseudo-Hiphil	histīr	to hide, conceal	-	-

Table 76

The causative is the most common function of the Hebrew C-Stem. It introduces a cause(r) and focuses on the causing and Instigation of the event, not on the Affectedness. This focus leads to an ingressive function. Nyberg expands on this claiming that the C-Stem moves the focus forwards in the sense that a G-Stem denoting the end of the action and focus on the Affectedness is countered by a C-Stem focusing on the action as ongoing. If this is the G-Stem notion instead, the C-Stem focuses on starting the action, and finally if the G-Stem denotes the action in its general, almost habitual, form the C-Stem will be an instantiation of it.[248] This is similar to Jenni's division between habitual D-Stems and C-Stems denoting an instantiation.[249] An example would be *ḥå̄š* "to hurry", *heḥīš* "to hurry in a specific situation or hurry to do something specific".

[245] Jenni, 1968, p. 129
[246] Glinert, 1989, p. 466
[247] This is drawn from Waltke & O'Connor, 1990, pp. 433-446, Gesenius, 1910, pp. 144-149, Nyberg, 1952, pp. 224-228, Joüon & Muraoka, 2008, pp. 150-152. In addition, there might also be traces of an elative function, cf. Waltke & O'Connor, 1990, p. 439.
[248] Nyberg, 1952, pp. 225-226
[249] Jenni, 1968, p. 59

Further, the declarative-estimative is a related function, although more specifically factitive. The concessive is perhaps a sort of permissive in which the new participant is slightly more involved than with the pure permissive where the cause(r) is [+VOL,-INST].

The function called "mode of action" is also termed "adverbial Hiphil",[250] and I believe it is a denominative function. An agent is introduced, and as the noun or adjective supports the state the participant is [+VOL, +INST, +AFF] and becomes the S of the clause. On a related note, we see that Waltke and O'Connor ascribe an array of modal nuances to the C-Stem.[251] Among them we find the *permissive* and the *tolerative*, but to expand this to include *solicitude* and *bestowal* seems to me to be reading the contextual information of the clauses in which these verbs appear into the verb, and the process is not yielding insights into the functions of the Hebrew C-Stem.

There are a number of denominatives in the C-Stem, and this is probably due to the structure of predicates in this *binyan* where a new participant is added to a notion. This is fertile ground for denominative formations, but as we have seen, the Affectedness focus of the D-Stem is more often exploited. As with the other stems the deponent verbs are such notions that already fit the participant and focus structures of the C-Stem. There are a few verbs that seem to fulfill a similar function to the elative, as mentioned when discussing the Akkadian Š-Stem, e.g. hɛᵓĕrīḵ "to be long" as well as "to lengthen".

Finally, the so-called pseudo-Hiphils must be commented upon. This is a term from Paul Joüon's grammar, revised by Takamitsu Muraoka.[252] The authors claim a certain number of BH C-Stems should be explained as G-Stems of the a-e-Class. The C-Stem prefix conjugation is *yaqtīl*, with the byform *yaqtel*, and the former might just as well be the prefix conjugation of such a G-Stem, and the C-Stem suffix conjugation would then be a reinterpretation. If this is the case it is an interesting testimony of how the *binyanim* interact, and it could tell us more about the relationship between the suffix and prefix conjugation forms of the Hebrew C-Stem which do not share a morphological marker. The C-Stem does not develop in particular ways in MH and IH.

The Hebrew C-Stem is causative, introducing a new argument which only rarely is identified with an already present participant. The *binyan* is therefore mostly valency increasing. The focus is on the Instigation associated with the cause(r), and this leads to an ingressive point of view.

[250] Joüon & Muraoka, 2008, p. 151
[251] Waltke & O'Connor, 1990, pp. 445-446
[252] Joüon & Muraoka, 2008, p. 152

4.2.6.6. The Hebrew tD-Stem

The Hebrew tD-Stem (Hitpael) is the only major t-Stem in BH, and seeing as t-Stems abound in the Semitic languages, an important question would be why only the D-Stem employs such a mechanism in BH. We shall first examine the functions of the tD-Stem, reported in Table 77:[253]

Reflexive	hitʾazzer	to gird oneself	ʾå̲zar	to gird
Autobenefactive/Curative	hitpallel	to pray, implore for favour	pillel	to pray
Reciprocal	hitrå̲ʾå̲(h)	to look at each other	rå̲ʾå̲(h)	to see, look
Passive	hiddakkå̲(ʾ)	to be broken	dikkå̲(ʾ)	to break
Intensive	hitqaṣṣep̄	to be overcome by anger	qå̲ṣap̄	to be angry
Simulative	hitᶜaššer	to pretend to be rich	ᶜašīr	rich
Denominative	hitḥaṭṭå̲(ʾ)	to remove sin from oneself	ḥiṭṭe(ʾ)	sin

Table 77

Th tD-Stem is a general detransitivizers. It either reduces the semantic transitivity of equiradical G- or D-Stems or encodes notions that are in themselves low in transitivity. The distinguishability of participants is reduced by conflating them, producing reflexives, autobenefactives, or reciprocals, or shifting focus to the affected entity promoting it to the most prominent syntactic position, and thus producing a passive. The intensive function reported is really a progressive, and it is a common trait with many tD-Stem verbs that they show complex inner structure. With *hitqaṣṣep̄* we see that it is an incremental process that would require more than an instantaneous observation to assess. It is not therefore really an intensive, but a gradual entering into the state by the S. Such internal structure is in itself a deviation from prototypical transitivity, as the process described may be partial and interrupted. I think this is why such verbs appear in the tD-Stem even when they take an object, which is not the case with *hitqaṣṣep̄*. States of this kind become gradual inchiatives, and achievements become accomplishments as the temporally outdrawn character of the tD-Stem extends the event to include the run-up to the actual achievement. The simulative takes an S or A that is [-VOL, +INST] as the Volition is not that of being or carrying out the actual state or action. This reduced transitivity is what makes the tD-Stem the choice for the simulative. A different explanation to the same end is to treat the simulative as a reflexive of the declarative-estimative function of the D-Stem. "To declare oneself rich" and "to pretend to be rich" are more or less the same state. The same function may be underlying some of the denominatives in the tD-Stem, e.g. *hitnabbe(ʾ)* "to appear as a prophet" from *nå̲b̄ī(ʾ)* "prophet", which could easily be "to declare oneself a prophet". It can also be a privative, as in *hitḥaṭṭå̲(ʾ)* above.

[253] This is drawn from Waltke & O'Connor, 1990, pp. 424-432, Gesenius, 1910, pp. 149-151, Nyberg, 1952, pp. 223-224, Joüon & Muraoka, 2008, pp. 147-148

In MH the NtD-Stem takes over the functions of the tD-Stem.[254] This is an interesting rearrangement of the *binyanic* material. We have seen, for instance in Akkadian and Arabic, that the /n/ and /t/ components do not go together, but in MH they seem to be used to reinforce each other's transitivity reducing potential. This interpretation is supported by the fact that the new NtD-Stem[255] does not establish itself in opposition to the tD-Stem, but completely merges with it.

In IH the tD-Stem is again the major t-Stem in the system, and the NtD-Stem has all but disappeared.[256] The N-Stem is not productive, and the tD-Stem has taken over some of its functions. We also see a tendency in IH to employ the tD-Stem widely in the formation of new words, e.g. *hitkalev* "to live on a low budget" from *kelev* "dog", and *histaxbek* "to make friends" from Arabic *ṣāḥibuka* "your friend".[257]

The Hebrew tD-Stem is detransitivizing, often leading to valency reduction. It conflates participants or demotes the agent, thus accommodating reflexive, reciprocal, passive, and autobenefactive notions. It can be gradual, reducing transitivity in the same way as an imperfective, or less completely carried out, as in the simulative.

4.2.6.7. The Hebrew Ablaut Stems

Ablaut derivation is primarily a mechanism that affects the D- and C-Stems, and we end up with the Pual and the Hofal. Waltke and O'Connor report factitive, resultative and denominative functions for the Pual, that is to say, it underlines Jenni's findings about the D-Stem. We are, however, dealing with a *binyan* that not only introduces a cause(r) and focuses on the affected entity's new state, it also suppresses the cause(r) and raises the affected entity to be an S. It is therefore an antifactitive, as a parallel term to the anticausative. These functions are in any case variations on the passive. Table 78 gives examples of these functions:[258]

Antifactitive	buššal	to be (made to be) boiled	biššel	to boil
Resultative	zuqqaq	to be filtered	ziqqeq	to filter
Denominative	duššan	to be fattened/fertilized	déšɛn	fat

Table 78

The denominative function is really an extension of the D-Stem Piel's potential. We see that the Pual is reducing transitivity to an extent that valency is reduced, and the affected entity becomes the syntactically most prominent element.

[254] Segal, 1980 (1927), pp. 64-67
[255] Only very rare traces of such a construction is found in BH, cf. Nyberg, 1952, p. 149.
[256] I do not mean to imply a diachronic process here. The IH verbal system is not a development from that of MH.
[257] This latter word is a quadriradical that is fitted into the tD-Stem. Tsarfaty, 2004, p. 189
[258] These are drawn from Waltke & O'Connor, 1990, pp. 418-423

The Ablaut Hofal stands in a similar relation to the C-Stem, as it suppresses the cause(r) and focuses on the affected entity. It is passive with resultative and anticausative functions, and it cannot be conceptualized without an implicit cause(r). Examples are given in :

Resultative	hūḵan	to be established	heḵīn	to establish
Anticausative	dubbaq	to stick (be made to stick)	hiḏbīq	to cause to stick
Denominative	humlaḥ	to be salted	mɛ́laḥ	salt

As we saw in Table 73 there are many rare or isolated Ablaut forms of various *binyanic* constructions in BH. They are not productive. As for the Pual and Hofal they are often used as participles, and this trend increases so that in MH the finite forms of the Pual are completely taken over by the tD- and NtD-Stems.[259] Hofal, on the other hand, is not reduced in this manner.

In IH a few instances of Ablaut with the tD-Stem are appearing, e.g. *hitputar* "to be asked to resign" from *hitpater* "to resign, i.e. fire oneself", and *hitnudav* "to be asked to volunteer" from *hitnadev* "to volunteer, i.e. donate oneself".

4.2.6.8. Other Hebrew Stems

I will mention only a few *binyanim* in this section. These are not the more isolated forms in Table 73, but elements that have shown a certain productivity.

First, the already mentioned NtD-Stem, Nitpael, in MH becomes the only t-Stem. The elements /n/ and /t/, as we have seen, are partly conflicting in that the former underlines the [+AFF], while the latter diverts this Affectedness to the more prominent element in the clause. It seems, however, that the NtD-Stem has combined them by letting the /n/ doubly mark the Affectedness of the S in for example a reflexive.

The existence of an št-Stem in BH is a much debated topic. The sole candidate for this *binyan* is the verb *hištaḥwā* "to bow down, prostrate oneself. It has been interpreted as the root √šḥh in a tR-Stem, but the general consensus, as mentioned earlier, seem to have shifted towards √ḥwy in an št-Stem.[260]

In MH we also find a C-Stem with /š/, the Šafel, e.g. *šiᶜbeḏ* "to enslave". This is similar to the Akkadian Š-Stem and the peripheral sibilant C-Stems in Aramaic. It coexists with an NCt-Stem, Ništafel, e.g. *ništaᶜbeḏ* "to be enslaved. We find such verbs in IH as well, and at least the /š/ element is contributing material to formations. An example of a verb reinterpreted as D-Stem is *šiqqem* "to rehabilitate" which could be paraphrased "to make stand (*qam*) again". There also seems to be a *binyan*-like formation with /ʾ/ in a few IH verbs, e.g. *ivxen* "to diagnose" from *baxan* "to examine".

[259] Segal, 1980 (1927), p. 62
[260] Huehnergard & Hackett, 2009, p. 230

4.2.7. Aramaic

The internal sub-classification of Aramaic, both historically and in dialects, is rather complex. I will limit the analysis here to a very brief overview of the *binyan* systems of Old Aramaic, Imperial Aramaic, Biblical Aramaic, and Syriac. The crucial factor I want to draw attention to is the increasingly prominent position of the t-Stems, and the lack of an N-Stem. The Aramaic varieties will not be as thoroughly investigated as the other languages in this thesis.

The oldest stages of Aramaic are usually named just Old Aramaic. They include the early inscriptions from the 9th century BCE onwards for a couple of hundred years, up until Imperial Aramaic which stretches for four hundred years from approximately 600 to 200 BCE.[261] The language is not uniform in the earliest stage, but throughout the inscriptions we find a G-Stem, a supposed D-Stem, although vowels and double consonants are generally unmarked, and a C-Stem with an /h-/-prefix. An N-Stem is attested only in the Deir ʿAllā inscription, for instance in II 12:[262] *nʾnḥ* "sighing", and Huehnergard argues that this, among other things, indicates that the inscription is not Aramaic at all. Neither is it Canaanite, but rather it is a related dialect that did not undergo the innovations branching off Aramaic and Canaanite.[263] Fales maintains that the passive in Old Aramaic must have been formed by inner vowel changes, and further that t-Stems are rare, appearing as a Gt- and a tG-Stem.[264] This leaves us with the following *binyanim* inventory at this stage:

Stem	Function
G-Stem	simple
D-Stem	factitive, causative
C-Stem (h)	causative
Gt/tG-Stem	passive

Table 79

In Imperial Aramaic we find a more symmetric system with G-, D-, and C-Stems with corresponding Ablaut passives and t-prefixed forms. The Ablaut passives are not attested throughout the paradigms, but appear mostly in the suffix conjugation and as participles. There are also some sibilant prefixed causatives (/s/š/), but these are regarded as loans.[265]

As for Biblical Aramaic, Franz Rosenthal reports the following system:

[261] Kaufman, 1997, pp. 114-115

[262] Hoftijzer & van der Kooij, 1976, pp. 174, 180, 292

[263] Huehnergard, 1991, pp. 289-290. Note also that the two N-Stems classified as certain by Hoftijzer and van der Kooij in the inscription (*nʾnḥ* "sighing", *nṣbw* "they gathered") are not passive at all. The former might, however, not be an N-Stem after all as Lipiński points out in Lipiński, 1994, pp. 149-150.

[264] Fales, 2011, p. 569

[265] Gzella, 2011, p. 581

Stem	Function	Stem	Function
G-Stem	simple	**tG-Stem**	reflexive/passive of G
D-Stem	factitive, intensive	**tD-Stem**	reflexive/passive of D
C-Stem (h/ʾ)	causative	-	

Table 80

Inner passives of G and C, and four instances of sibilant causatives (three in /š/ and one in /s/) borrowed from Akkadian are also listed.[266]

Finally, in Syriac, we find a symmetrical system of G-, D-, and C-Stems with corresponding t-Stems:[267]

Stem	Function	Stem	Function
G-Stem	simple	**tG-Stem**	detransitivizing
D-Stem	intensive, causative	**tD-Stem**	
C-Stem (ʾ)	causative	**tC-Stem**	

The point here is not to map out the nuances of the system, but to show how the t-Stems have spread from being a G-Stem feature to becoming increasingly important and forming derivations from all three of the G-, D-, and C-Stems. The function is detransitivizing, accommodating many of the traits seen in the other languages' t-Stems. The N-Stem has either disappeared, or cannot be posited to have been part of any stage of Aramaic. If Old Aramaic had an N-Stem it was pushed out by the t-Stem as it took over all detransitivizing functions, including the passive and reflexive. This would have happened simultaneously with other shifts in the Aramaic verbal system. The participle, for instance, takes on a perfect meaning at this stage, and I believe this lays out the clue to where the explanation of the absence of the N-Stem in Aramaic, at least from Imperial Aramaic onwards, can be found. An investigation of the whole verbal system, and the interactions of aspect and diathesis within it is called for.

4.2.8. Phoenician-Punic

In Phoenician-Punic we find the following *binyanim*:[268]

Stem	Krahmalkov's designation[269]	Example	
G-Stem	QAL	pᶜlt	I did
N-Stem	NIP'AL	npᶜl	it was done/made
D-Stem	PI'EL	šlk	he provided
C-Stem	YIP'IL	yqdšt	I inaugurated/consecrated/dedicated
tD-Stem	YITPE'EL	htqdš	he sanctified himself
Gt-Stem	YIPTA'AL	tḥtsp	it will break

Table 81

[266] Rosenthal, 1961, pp. 42, 53
[267] Adapted from Nöldeke, 1880, p. 95.
[268] I give examples in transliteration, and they are drawn from Friedrich & Röllig, 1999, pp. 77, 87-88, 92 and Krahmalkov, 2001, p. 156.
[269] Krahmalkov, 2001, pp. 154-157

There might have been apophonic passives to all or some of these stems, but without vowel marking the inscriptions do not provide unambiguous evidence. This is also true for the D-Stem in relation to the G-Stem, but for the example cited in Table 81, /šlk/, which was part of the name /bᶜlšlk/ we also have the later Punic spelling with *mater lectionis*, i.e. /bᶜlšylk/ and the Greek transcritpion *Βαλσιλληχ*. The C-Stem was made by the prefix /y/ with the probable vocalization of *yiqdés-ti* for the example above.[270] This /y/-prefix was present throughout the paradigm, including with the infinitives. In Neo-Punic (Spätpunisch) the prefix appears as /ʾy/hy/h/ḥ/y/.[271] The tD-Stem does not appear in Phoenician, but in Neo-Punic it appears with either /ht-/ or /ʾyt-/ prefixes. Finally, the Gt-Stem appears only in Byblian Phoenician. The functions of the binyanim are summed up in Table 82:

Stem	Krahmalkov's designation	Function
G-Stem	QAL	Simple
N-Stem	NIP'AL	Passive, reflexive
D-Stem	PI'EL	Factitive, intensive
C-Stem	YIP'IL	Causative
tD-Stem	YITPE'EL[272]	Reflexive, reciprocal, passive
Gt-Stem	YIPTA'AL	Passive, anticausative

Table 82

The main contribution of Phoenician-Punic in a comparative perspective is the /y/ in the C-Stem. Beyond this it is not very different from Hebrew.

5. Summary and conclusions

I set out to map the functions of the *binyanim* in some of the Semitic languages, and, if possible, uncover unifying principles within them. I believe this has been carried out successfully. It is evident that there are some elementary functions of the *binyanim* that can unify the more complex semantic-syntactic functions they are called upon to express. Furthermore, these core functions have shown how situations may be articulated as linguistic entities and linked to the relevant participants by direct recourse to the *binyanim*. The G-Stem is not the absolute entry point to the system, although it is the most common.

Partial conclusions of the functions have been given for the analysis each *binyan*, and I will not repeat them here. I will instead draw some conclusions across the language boundaries to express the general tendencies in the Semitic *binyan* system.

We have seen that the N- and t-Stems overlap in several languages. They are both detransitivizing, with the former focusing on the state of the affected entity and the latter marking reduced transitivity without the stativity. They can accommodate many of the same functions and

[270] Krahmalkov, 2001, pp. 155, 159
[271] Ibid., p. 156
[272] Röllig calls this Yitpaᶜel and includes a later Yitpolel, cf. Röllig, 2011, p. 477.

push-chain, drag-chain mechanisms seem to be at play regarding these stems in several of the languages investigated here. I believe the analysis carried out in this thesis was quite successful in revealing the underlying structures of the detransitivizing *binyanim*. The results for the stems increasing transitivity were less obvious, but I think a useful insight throughout the analysis has been the realization that not only do the *binyanim* encode semantic and syntactic functions, they direct focus at various participants, and various properties of these participants. The factitive and causative may for instance often overlap, but the difference between them is the focus on either the [+AFF] of the causee or theme, or the [+INST] of the cause(r).

The iconic relationship between reduplication and intensity of the D-Stems has also been further refuted, as we have seen how the intensive function may be derived directly from the factitive instead. The factitive focus on the [+INST] property is applied directly to the already present agent when the intensive function arises, and the new participant is not introduced. This Instigation is mirrored by increased Affectedness of O, or a plurality of O.

An aspect of the system that has become clear through the approach adopted here is the complete refutation of the traditional approach to the *binyanim* in which each of them was described in terms of a function. We have seen that no *binyan* can be said to be strictly passive, reflexive, or causative. The linguistic mechanisms of the *binyanim* are more basic than that, directing focus or diverting the directionality of the action, thus separating or confusing the participants. It is on top of these elementary functions that the semantic and syntactic mechanisms of causativity, passivity, reflexivity etc. can be expressed. This is to a certain extent self-evident when examining for example the passive as a category. It is not completely unified and its complexity points to it not being material for isomorphism at all. The same can to a certain extent be said of the reflexive and causative. They are more complex than the coarse core mechanisms of the *binyanim*.

Throughout this thesis I have conveyed my belief that the parameters of transitivity should be applied to other categories in the verbal system as well. We have on occasion seen that perfectivity, nominalization, modality and negation intersect with the *binyan* systems, and a unified account of these phenomena could shed further light on the *binyanim* themselves.

Bibliography

Abraham, W., 2006. Introduction: Passivization and typology - Form vs. function - a confined survey into the research status quo. In: W. Abraham & L. Leisiö, eds. *Passivization and Typology: Form and function.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 1-27.

Alexiadou, A., Anagnostopoulou, E. & Everaert, M., 2004. Introduction. In: A. Alexiadou, E. Anagnostopoulou & M. Everaert, eds. *The Unaccusativity Puzzle - Explorations of the Syntax-Lexicon Interface.* Oxford: Oxford University Press, pp. 1-21.

Amberber, M., 2000. Valency-changing and valency-encoding devices in Amharic. In: R. Dixon & A. Y. Aikhenvald, eds. *Changing Valency: Case studies in transitivity.* Cambridge: Cambridge University Press, pp. 312-332.

Amberber, M., 2009. Quirky alternations of transitivity: The case of ingestive predicates. In: J. Newman, ed. *The Linguistics of Eating and Drinking.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 45-64.

Appleyard, D. L., 1972. /a-/ and /as-/ Verb Forms in Amharic. *Bulletin of the School of Oriental and African Studies, University of London,* 35(1), pp. 18-26.

Bach, E., 1986. The Algebra of Events. *Linguistics and Philosophy,* 9(1), pp. 5-16.

Baize-Robache, M., 2011. Les formes verbales augmentées de l'arabe moderne de presse: une étude statistique et syntaxico-sémantique à travers un corpus de presse. *Arabica,* Volume 58, pp. 404-429.

Banksira, D. P., 2000. *Sound Mutations: the morphophonology of Chaha.* Philadelphia/Amsterdam: John Benjamins Publishing Company.

Bauer, H. & Leander, P., 1922. *Historische Grammatik der hebräischen Sprache des Alten Testamentes.* Halle: Verlag von Max Niemeyer.

Buccellati, G., 1996. *A Structural Grammar of Babylonian.* Wiesbaden: Harrassowitz Verlag.

Crystal, D., 2008. *A Dictionary of Linguistics and Phonetics.* 6th ed. Oxford: Blackwell Publishing.

Diaknoff, I. M., 1988. *Afrasian Languages.* Moscow: Nauka Publishers.

Diem, W., 1982. Die Entwicklung des Derivationsmorphems der t-Stämme im Semitischen. *Zeitschriften der Deutschen Morgenländischen Gesellschaft,* Volume 132, pp. 29-84.

Dillmann, A., 1907. *Ethiopic Grammar (translated from German by James Crichton, enlarged and improved by Carl Bezold).* 2nd ed. London: Williams & Norgate.

Dixon, R., 2000. A typology of causatives: form, syntax and meaning. In: R. Dixon & A. Y. Aikhenvald, eds. *Changing Valency: Case studies in transitivity.* Cambridge: Cambridge University Press, pp. 30-83.

Dixon, R. M. & Aikhenvald, A. Y. eds., 2000. Introduction. In: *Changing Valency: case studies in transitivity.* Cambridge: Cambridge University Press, pp. 1-29.

Dixon, R. M. W., 1994. *Ergativity.* Cambridge: Cambridge University Press.

Doron, E., 1999. A syntactic derivation of Semitic verbs. In: S. Bird, A. Carnie, J. D. Haugen & P. Norquest, eds. *Proceedings of the 18th West Coast Conference on the Formal Linguistics.* Somerville: Cascadilla Press, pp. 106-131.

Doron, E., 2003. Agency and Voice: The Semantics of the Semitic Templates. *Natural Language Semantics 11,* pp. 1-67.

Doron, E., 2003. Transitivity alternations in the Semitic template system. In: J. Lecarme, ed. *Research in Afroasiatic Grammar II.* Philadelphia/Amsterdam: John Benjamins Publishing Company, pp. 127-149.

Edzard, D. O., 1965. Die Stämme des altbabylonischen Verbums in ihrem Oppositionssystem. In: H. Güterbock & T. Jacobsen, eds. *Studies in honor of Benno Landsberger on his seventy-fifth birthday.* Chicago: University of Chicago Press, pp. 111-120.

Edzard, L., 2011. Biblical Hebrew. In: S. Weninger, ed. *The Semitic Languages: An International Handbook.* Berlin/Boston: de Gruyter Mouton, pp. 480-514.

Fales, F. M., 2011. Old Aramaic. In: S. Weninger, ed. *The Semitic Languages: An International Handbook.* Berlin/Boston: de Gruyter Mouton, pp. 555-573.

Fassi Fehri, A., 2003. Verbal plurality, transitivity, and causativity. In: J. Lecarme, ed. *Research in Afroasiatic Grammar II: selected papers from the fifth conference on afroasiatic languages, Paris, 2000.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 151-185.

Fischer, W., 2002. *A Grammar of Classical Arabic.* New Haven: Yale University Press.

Fleisch, H., 1944. *Les verbes à allongement vocalique interne en sémitique.* Paris: Institut d'Ethnologie.

Friedrich, J. & Röllig, W., 1999. *Phönizisch-punische Grammatik.* 3rd ed. Roma: Editrice Pontificio Istituto Biblico.

Gaudefroy-Demombynes, M. & Blachère, R., 1937. *Grammaire de l'arabe classique.* Paris: Librairie Orientale et Américaine.

Gesenius, W., 1910. *Gesenius' Hebrew Grammar, as Edited and Enlarged by the Late E. Kautzsch.* Second English Edition Revised in Accordance with the Twent-Eighth German Edition (1909) ed. Oxford: Clarendon Press.

Givón, T., 2001. *Syntax: Volume I.* Amsterdam/Philadelphia: John Benjamins Publishing Company.

Glinert, L., 1989. *The Grammar of Modern Hebrew.* Cambridge: Cambridge University Press.

Goetze, A., 1942. The So-Called Intensive of the Semitic Languages. *Journal of the American Oriental Society,* 62(1), pp. 1-8.

Gragg, G., 1997. Ge'ez (Ethiopic). In: R. Hetzron, ed. *The Semitic Languages.* Oxon: Routledge, pp. 242-260.

Guerssel, M. & Lowenstamm, J., 1996. Ablaut in Classical Arabic Measure I Active Verbal Forms. In: J. Lecarme, J. Lowenstamm & U. Shlonsky, eds. *Studies in Afroasiatic Grammar.* The Hague: Holland Academic Graphics, pp. 123-134.

Gzella, H., 2011. Imperial Aramaic. In: S. Weninger, ed. *The Semitic Languages: An International Handbook.* Berlin/Boston: de Gruyter Mouton, pp. 574-586.

Haiman, J., 1995. Moods and MetaMessages: Alienation as a Mood. In: J. Bybee & S. Fleischman, eds. *Modality in Grammar and Discourse.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 329-345.

Haspelmath, M., 1990. The Grammaticization of Passive Morphology. *Studies in Language,* 14(1), pp. 25-72.

Hasselbach, R., 2005. *Sargonic Akkadian: A Historical and Comparative Study of the Syllabic Texts.* Wiesbaden: Harrassowitz.

Haywood, J. A. & Nahmad, H. M., 1965. *A New Arabic Grammar of the Written Language.* London: Lund Humphries.

Hoftijzer, J. & van der Kooij, G., 1976. *Aramaic texts from Deir ʻAllā.* Leiden: Brill.

Hopper, P. J. & Thompson, S. A., 1980. Transitivity in Grammar and Discourse. *Language,* Jun, 56(2), pp. 251-299.

Hudson, G., 1991. A and B-type Verbs in Ethiopian and Proto-Semitic. In: *Semitic Studies: In honor of Wolf Leslau on the occasion of his eighty-fifth birthday.* Wiesbaden: Harrassowitz, pp. 679-689.

Huehnergard, J., 1991. Remarks on the Classification of the Northwest Semitic Languages. In: *The Balaam Text from Deir 'Alla Re-evaluated.* Leiden: Brill, pp. 282-293.

Huehnergard, J., 2002. izuzzum and itūlum. In: T. Abusch, ed. *Riches Hidden in Secret Places: Ancient Near Eastern Studies in Memory of Thorkild Jacobsen.* Winona Lake: Eisenbrauns, pp. 161-185.

Huehnergard, J., 2005. *A Grammar of Akkadian.* 2nd ed. Winona Lake: Eisenbrauns.

Huehnergard, J. & Hackett, J. A., 2009. On Revising and Updating BDB. In: J. Dyk & W. van Peursen, eds. *Foundations for Syriac Lexicography III.* Piscataway: Gorgias Press, pp. 227-234.

Humphreys, R. L., 1999. Valency Changing Alternations. In: K. Brown & J. Miller, eds. *Concise Encyclopedia of Grammatical Categories.* Amsterdam: Elsevier, pp. 391-400.

Jenni, E., 1968. *Das hebräische Piᶜel: Syntaktisch-semasiologische Untersuchung einer Verbalform im Alten Testament.* Zürich: EVZ-Verlag.

Joüon, P. & Muraoka, T., 2008. *Grammaire de l'hébreu biblique.* 2nd ed. Roma: Editrice Pontificio Istituto Biblico.

Junger, J., 1987. *Predicate Formation in the Verbal System of Modern Hebrew.* Amsterdam: Foris Publications.

Kaufman, S. A., 1997. Aramaic. In: *The Semitic Languages.* Oxon: Routledge, pp. 114-130.

Kienast, B., 2001. *Historische Semitische Sprachwissenschaft.* Wiesbaden: Harrassowitz Verlag.

Kouwenberg, N., 1997. *Gemination in the Akkadian Verb.* Assen: van Gorcum.

Kouwenberg, N., 2010. *The Akkadian Verb and Its Semitic Background.* Winona Lake: Eisenbrauns.

Krahmalkov, C. R., 2001. *A Phoenician-Punic Grammar.* Leiden: Brill.

Kulikov, L. I., 2001. Causatives. In: M. Haspelmath, E. König, W. Oesterreicher & W. Raible, eds. *Language typology and language universals: An International Handbook.* Berlin/New York: Walter de Gruyter, pp. 886-898.

Kuno, S. & Takami, K.-i., 2004. *Functional Constraints in Grammar: On the unergative-unaccusative distinction.* Amsterdam/Philadelphia: John Benjamins Publishing Company.

Kuryłowicz, J., 1973. *Studies in Semitic Grammar and Metrics.* London: Curzon Press.

Lambdin, T. O., 1978. *Introduction to Classical Ethiopic.* Missoula: Scholars Press.

Lehmann, C., 2006. Participant roles, thematic roles and syntactic relations. In: T. Tsunoda & T. Kageyama, eds. *Voice and Grammatical Relations: In honor of Masayoshi Shibatani.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 153-174.

Leslau, W., 1995. *Reference Grammar of Amharic.* Wiesbaden: Harrassowitz.

Lichtenberk, F., 1999. Reflexives and Reciprocals. In: K. Brown & J. Miller, eds. *Concise Encyclopedia of Grammatical Categories.* Amsterdam: Elsevier, pp. 313-319.

Lieberman, S. J., 1986. The Afro-Asiatic Background of the Semitic N-Stem. *Bibliotheca Orientalis,* XLIII(5/6), pp. 577-628.

Lipiński, E., 1994. *Studies in Aramaic Inscriptions and Onomastics II.* Leuven: Peeters Publishers.

Lipiński, E., 2001. *Semitic Languages: Outline of a Comparative Grammar.* Leuven: Peeters.

Nyberg, H. S., 1952. *Hebreisk Grammatik.* Stockholm: Almqvist & Wiksell Förlag.

Næss, Å., 2007. *Prototypical Transitivity.* Amsterdam: John Benjamins Publishing Company.

Nöldeke, T., 1880. *Kurzgefasste syrische Grammatik.* Leipzig: T.O. Weigel.

Retsö, J., 1983. *The Finite Passive Voice in Modern Arabic Dialects.* Göteborg: Acta Universitatis Gothoburgensis.

Retsö, J., 1989. *Diathesis in the Semitic languages: a comparative morphological study.* Leiden: E.J. Brill.

Rosenthal, F., 1961. *A Grammar of Biblical Aramaic.* Wiesbaden: Otto Harrassowitz.

Rothmayr, A., 2009. *The Structure of Stative Verbs.* Amsterdam/Philadelphia: John Benjamins Publishing Company.

Röllig, W., 2011. Phoenician and Punic. In: S. Weninger, ed. *The Semitic Languages: An International Handbook.* Berlin/Boston: de Gruyter Mouton, pp. 472-479.

Segal, M. H., 1980 (1927). *A Grammar of Mishnaic Hebrew.* Oxford: Clarendon.

Shibatani, M. & Pardeshi, P., 2002. The causative continuum. In: M. Shibatani, ed. *The Grammar of Causation and Interpersonal Manipulation.* Amsterdam/Philadelphia: John Benjamins Publishing Company, pp. 85-126.

Siewierska, A., 1984. *The Passive: A Comparative Linguistic Analysis.* London: Routledge.

Spitta-Bey, W., 1880. *Grammatik des arabischen Vulgärdialectes von Ägypten.* Leipzig: J.C. Hinrichs'sche Buchhandlung.

Streck, M. P., 2011. *Altbabylonisches Lehrbuch.* Wiesbaden: Harrassowitz.

Tenny, C. & Pustejovsky, J., 2000. A History of Events in Linguistic Theory. In: C. Tenny & J. Pustejovsky, eds. *Events as Grammatical Objects.* Stanford: CSLI Publications, pp. 3-37.

Tsarfaty, R., 2004. *'binyanim ba'avir: An investigation of Aspect Semantics in Modern Hebrew.* Amsterdam: Institute for Logic Language and Computation.

Tsarfaty, R., 2005. Causative constructions and aspectual meanings: a case study from Semitic derivational morphology. In: P. Dekker & M. Franke, eds. *Proceedings of the Fifteenth Amsterdam Colloquium.* Amsterdam: ILLC/Department of Philosophy, University of Amsterdam, pp. 245-250.

van Lambalgen, M. & Hamm, F., 2005. *The Proper Treatment of Events.* Hoboken: Blackwell Publishing.

Vendler, Z., 1967. *Linguistics in Philosophy.* Ithaca/London: Cornell University Press.

Verheij, A. J., 2000. *Bits, Bytes and Binyanim: A Quantitative Study of Verbal Lexeme Formations in the Hebrew Bible.* Leuven: Peeters Publishers.

Versteegh, K., 1997. *The Arabic Language.* Edinburgh: Edinburgh University Press.

von Soden, W., 1995. *Grundriss der akkadischen Grammatik.* 3rd ed. Roma: Editrice Pontificio Istituto Biblico.

Waltke, B. K. & O'Connor, M. P., 1990. *An introduction to Biblical Hebrew syntax.* Winona Lake: Eisenbrauns.

Weninger, S., 2011. Old Ethiopic. In: S. Weninger, ed. *The Semitic Languages: An International Handbook.* Berlin/Boston: de Gruyter Mouton, pp. 1124-1142.

Woidich, M., 2006. *Das Kairenisch-Arabische: eine Grammatik.* Wiesbaden: Harrassowitz.

Wright, W., 1896-98. *A Grammar of the Arabic Language.* 3rd ed. Cambridge: s.n.

Zaborski, A., 2007. Non-Causative Verbs of the Causative ʾaqtala Class in Arabic and *yuqtilu Conjugation in Proto-Semitic. In: T. Bar & E. Cohen, eds. *Studies in Semitic and General Linguistics in Honor of Gideon Goldenberg.* Münster: Ugarit-Verlag, pp. 31-43.